

# **P1000**



## **Installation Guide**

*Ver. Draft 1.2\_2009/06/29*

## System box module installation caution note

**CAUTION:** Before installing or removing the CPU Box into the system unit, please make sure that the system power is turned off and the AC power adaptor is disconnected from the system unit.

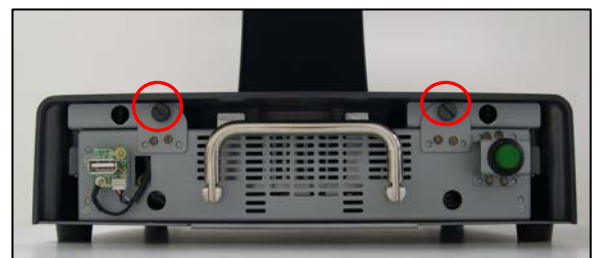


### Correct installation PC Box Procedure:

- ①. Push the CPU Box into the base of system, and ensure that the CPU BOX is fully docked with the internal connector at the back of system unit.



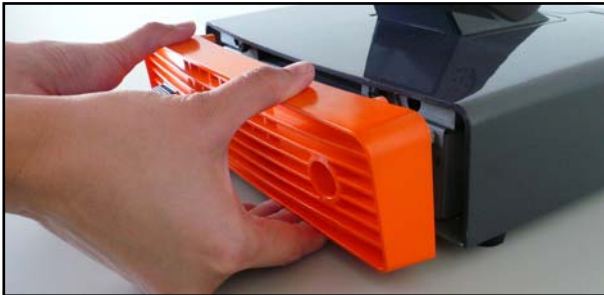
- ②. Raise the handle, as indicated, and make sure that the 2 thumb screws, as shown, are locked..(The 2 thumb screws place in Accessory box.)



## P1000 Installation Guide



- ③. Attach the Magnetic front base cover into system unit.



- ④. Connect the AC power adaptor to the system as shown.



- ⑤. Turn on the power.



## Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and shielded AC power cables must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

## Declaration of Conformity

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. this device must accept any interference received, including interference that may cause undesired operation.

DHHS- the CD-ROM Drive

FDA Regulations require the following statement for all laser-based devices:

**“Caution,** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.”



**CAUTION:** This appliance contains a laser system and is classified as a “CLASS 1 LASER PRODUCT”. To use this model properly, read the instruction manual carefully and keep this manual for future reference. In case of any trouble with this model, please contact your nearest “Authorized Service Station”. To prevent direct exposure to the laser beam, do not try to open this enclosure.

---

## Important Safety Information

### SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from the AC outlet before cleaning. Don't use liquid or spray detergent for cleaning. Use only a moistened sheet or cloth.
4. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
5. Keep this equipment from humidity.
6. Lay this equipment on a stable surface when installing.
7. Do not leave this equipment in a non-air-conditioned environment, or in a storage temperature above 60° C. Such conditions may damage the equipment.
8. The openings on the enclosure are for air convection and protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Check the voltage of the power source when connecting the equipment to the power outlet.
10. Place the power cord so that it will not be stepped on. Do not place anything over the power cord.  
The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect the equipment from the mains to avoid damage.
13. Never allow liquid into ventilation openings. This could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The Power cord or plug is damaged.
  - b. Liquid has penetrated the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well or you cannot get it work according to the user's manual.
  - e. The Equipment has been dropped and damaged.
  - f. The equipment has obvious signs of damage.



**WARNING!** Not intended for Outdoor Use.



**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with same type, and discard used batteries according to manufacturers instructions.

---

## Copyright

The information in this guide is subject to change without prior notice.

The manufacturer shall not be liable for technical or editorial errors or omissions contained herein, nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

This manual contains information protected by copyright. No part of this manual may be photocopied or reproduced in any form without prior written consent from the manufacturer.

© 2009 All rights reserved.

The software described in this guide is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of the agreement.

Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

First Edition April 2009

## Table of Content

Chapter 1	Introduction.....	1
	<i>P1000 Characteristics .....</i>	<i>1</i>
	<i>How to Use This Manual .....</i>	<i>2</i>
	<i>Specifications .....</i>	<i>3</i>
	<i>A Visual Tour of P1000.....</i>	<i>4</i>
	Front View.....	4
	Rear View.....	5
	<i>Dimensions .....</i>	<i>8</i>
	P1000 Dimensions .....	8
	P1000 and MSR Dimensions .....	8
	P1000 and 15cm 8.9" Pole Display Dimensions .....	9
	P1000 and 15cm VFD Pole Display Dimensions .....	10
	<i>Connector Panels .....</i>	<i>11</i>
	Primary Connector Panel .....	11
	Second Connector Panel.....	12
Chapter 2	Hardware Setup .....	13
	<i>P1000 Assembly .....</i>	<i>13</i>
	Warnings and Cautions .....	13
	Installing CPU box .....	14
	Changing Front Panel Cover.....	16
	Changing Front Base Cover.....	18
	Removing the CPU box and box cover .....	19
	Replacing the CPU box cover .....	20
	Installing UPS.....	21
	Installing Additional Memory Card .....	23
	Populating DIMM Sockets .....	23
	Installing DIMMs.....	23
	Removing and Replacing the SATA Hard Disk .....	25
	Installing Compact Flash Card .....	27
	Installing MSR/Fingerprint/I-Button module .....	28
	Installing 8.9" pole display and VFD pole display.....	29
	P1000 and 8.9" 15cm pole display full view.....	31
	P1000 and VFD 15cm pole display full view .....	31
	Installing Cash Drawer .....	32
	<i>Main Board Configuration.....</i>	<i>33</i>
	Main Board Pin Definition .....	33
	Clearing CMOS.....	35
	<i>I/O Board Configuration .....</i>	<i>36</i>
	IOTR Board Pin Definition .....	36
	Top IO Board Pin Definition .....	43
	Bottom IO Board Pin Definition .....	45



<b>Chapter 3</b>	<b>Software Setup .....</b>	<b>48</b>
	<i>Driver Software List.....</i>	<i>48</i>
	<i>Intel Chipset Driver Installation.....</i>	<i>49</i>
	<i>Intel Graphics Driver Installation .....</i>	<i>50</i>
	<i>ELO Touch Screen Driver Installation .....</i>	<i>51</i>
	<i>Audio Driver Installation .....</i>	<i>53</i>
	<i>Gigabit LAN Driver Installation.....</i>	<i>54</i>
	<i>Wireless LAN Driver Installation (optional).....</i>	<i>55</i>
	<i>RFID Driver Installation (optional).....</i>	<i>56</i>
	<i>Fingerprint Reader Driver Installation (optional) .....</i>	<i>57</i>
	<i>System Driver Installation (Required for Cash Drawer and UPS) .....</i>	<i>58</i>
	<i>OPOS Driver Installation.....</i>	<i>59</i>
	<i>MSR Driver Installation (optional) .....</i>	<i>60</i>
<b>Appendix A.</b>	<b>Sample C++ Cash Drawer Code for Windows .....</b>	<b>61</b>
<b>Appendix B.</b>	<b>Sample Visual Basic Cash Drawer Code for Windows .....</b>	<b>62</b>



# **Chapter 1 Introduction**

## **P1000 Characteristics**

- P1000 uses a high speed processor capable of handling a high capacity data efficiently.
- P1000 solid quality Magnesium-Aluminum & Aluminum Die-casting housing distinguishes it from ordinary plastic housings.
- The P1000 touch terminal all-in-one design combines a powerful PC, multiple LCD and touch screens, which are suitable for any market. The primary LCD panel can be tilted at multiple angles.
- P1000 functionality extends far beyond the standard setup. P1000 can be adapted for a variety of uses with the addition of any of the following options: Magnetic Stripe Card Reader, Fingerprint Reader, I-Button Reader, RFID, WIFI/Bluetooth, VFD/LCD customer display and cash drawer, LAN, Audio devices, Compact Flash or USB devices (all available upon request).
- The solid Magnesium-Aluminum & Aluminum Die-casting Housing design enhances heat dissipation and passes EMI testing.
- P1000 can easily replace the front panel cover, providing a variety of colors for you to choose from for a variety of business occasions and indoor space.

# How to Use This Manual

This manual contains all the information you need to set up and use P1000. In addition, you can also consult the manuals for the operating system and added hardware.

**Chapter 1** Provides an introduction what you have in the box and give you an overview of the product specification, appearance and interface.

**Chapter 2** Provides all necessary information for how to properly mount the peripheral devices. And shows the definitions and locations of jumpers and connectors that you can easily configure your system.

**Chapter 3** Provides the necessary information for installing the Intel Chip set driver, Video driver, and the touch screen tools, Audio, USB, VFD and LAN drivers.

This guide provides basic information for upgrading this model.



**WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.



**CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.



**NOTE:** Text set off in this manner provides important supplemental information.

---

# Specifications

System Configuration	
CPU(μPGA)	Intel Pentium M / Celeron M Processor, supports 400/533 MHz FSB
Cash Memory	2 <sup>nd</sup> level depend on CPU
System Chipset	Intel 915 GME+ICH6
System Memory	Default 256MB, maximum up to 2 GB
Compact Flash	Support Compact Flash Card
HDD	Internal 2.5" 80GB SATA hard disk drive (or above)
Speaker	Integrated 2 stereo 2 watt speakers.
Power	External 120 watt 19Vdc power adapter.
Main Display	
Chipset	GMA900
Memory Size	Share system Memory, 32MB
Resolution Size	15" TFT LCD/1024x768
Brightness	250cd/m <sup>2</sup> (Adjustable)
Touch Screen	15" ELO 5-wire resistive touch panel 15" ABON 5-wire resistive touch panel
I/O Port	
Serial Port	4 x External: COM1 & COM2 & COM5 (D-SUB) COM6(RJ-45) 2 x Internal: COM3 for Touch screen. COM4 for VFD.
Parallel Port	One Bi-directional Parallel Port(D-SUB25)
USB port	Supports 8 USB 2.0 ports for future expansion (3xInternal, 5xExternal) Front side x 1, Rear side x 4 (12V power USBx1, 5V power USBx1)
Cash drawer port	RJ-11 Single/Dual Cash Drawer port ,12V/24V actuation support.
LAN Port	10/100/1000Mbps Base-T
Audio Port	Line-out
Optional Features	
Customer display	VFD Display 8.9" TFT LCD(Resistive Touch/Non-Touch)
2-in-1(MSR +Fingerprint)	Triple Track MSR.+ Fingerprint Reader
2-in-1(MSR +I-Button)	Triple Track MSR.+ I-Button Reader
RFID	Radio Frequency Identification module
Wi-Fi or Bluetooth	Wi-Fi module 802.11 b/g or USB Bluetooth module

<b>UPS</b>	Battery pack(5 minutes run time after power loss)
<b>Mechanical and Environment</b>	
<b>Construction</b>	Die-casting Housing & Magnesium-Aluminum alloy
<b>Dimensions</b>	389.5(L) x 360.3(W) x 390(H) mm
<b>Housing Color</b>	Housing color: Gray Front panel cover & Front base cover color: Silver, Red, Gray, Green, Yellow, Orange
<b>Weight</b>	9 Kg
<b>Operating temperature</b>	0 °C ~ 35 °C (*CPU needs Cooler & silicone heatsink paste*)
<b>EMI/Safety</b>	CE, RoHS

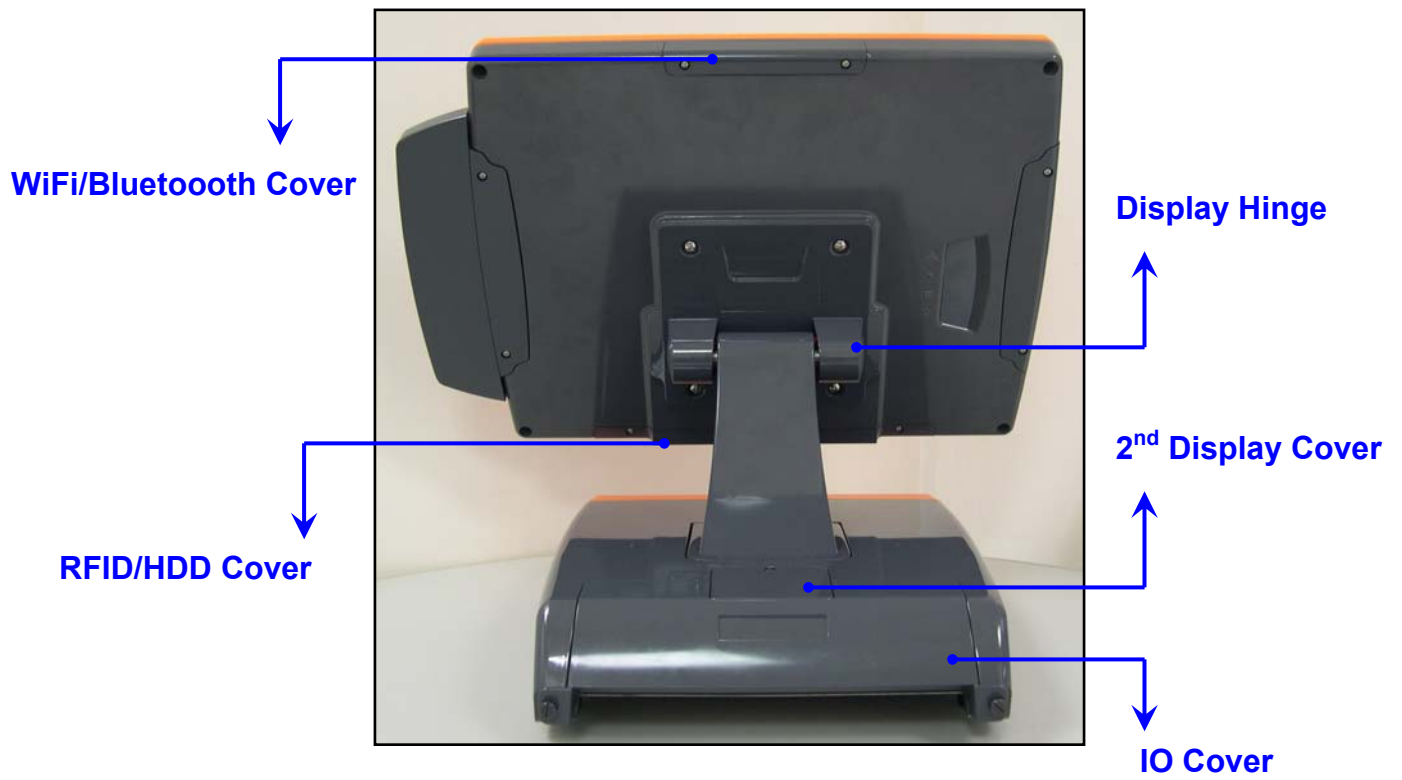
## A Visual Tour of P1000

Before you start, take a few moments to become familiar with P1000.

### Front View











## Rear View



## Packaging Content

*The following items are standard with P1000:*

➤ AC power cord	
➤ Power adaptor	
➤ COM6 Adaptor Cable	
➤ Utility and Motherboard chipset driver CD	
➤ POS Body	
➤ CPU Box module	
➤ Front panel Cover module	
➤ Front base Cover module	

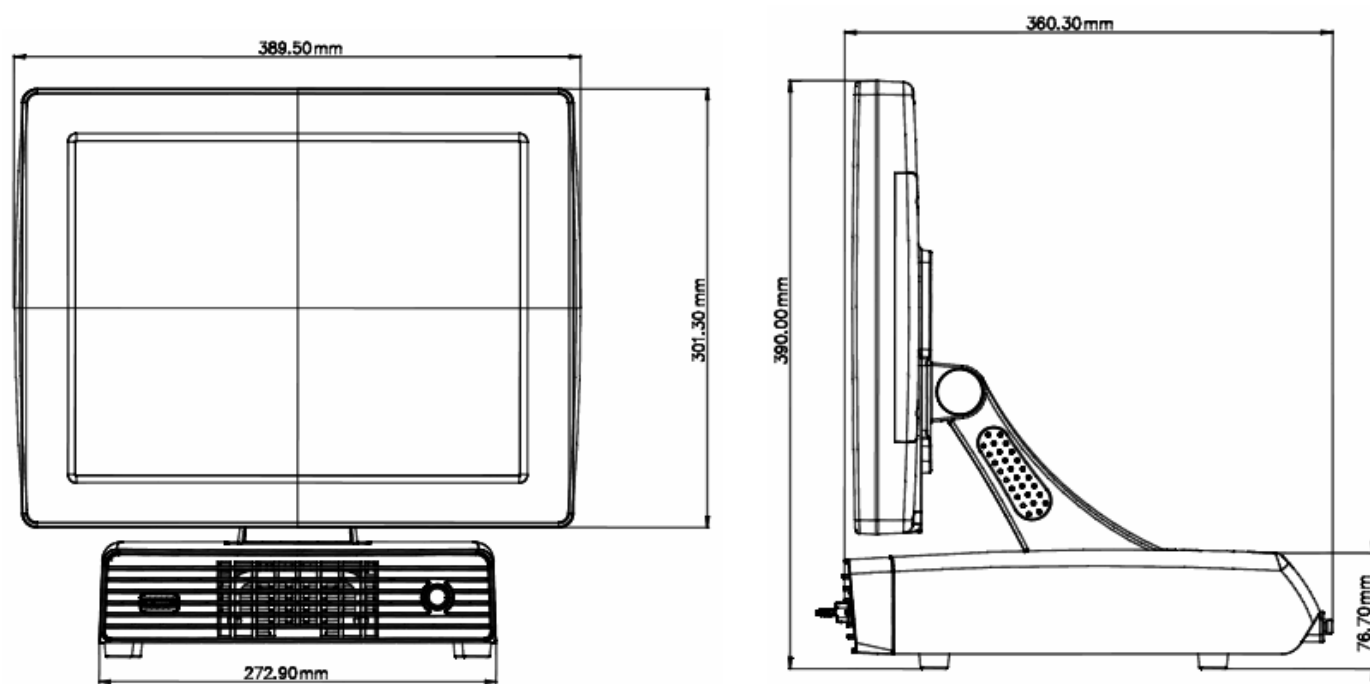
***The following items are optional:***

- 2-in-1 ( Magnetic Stripe Card Reader + Fingerprint Reader )
- 2-in-1 (Magnetic Stripe Card Reader + I-Button Reader )
- 2-way choice ( WiFi or Bluetooth )
- Radio Frequency Identification (RFID)
- Uninterruptible power supply (UPS)
- 15cm pole VFD customer display
- 15cm pole 8.9" 2<sup>nd</sup> display

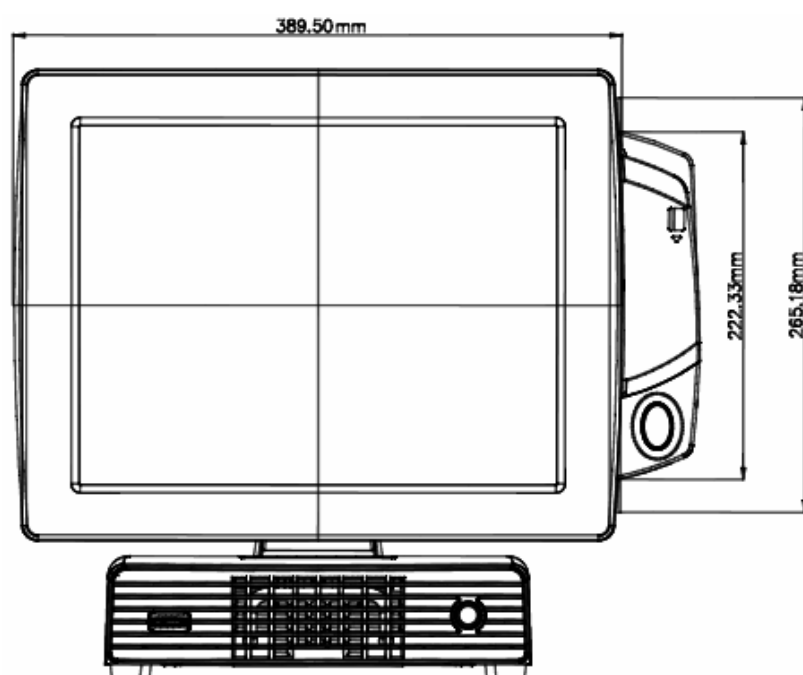


## Dimensions

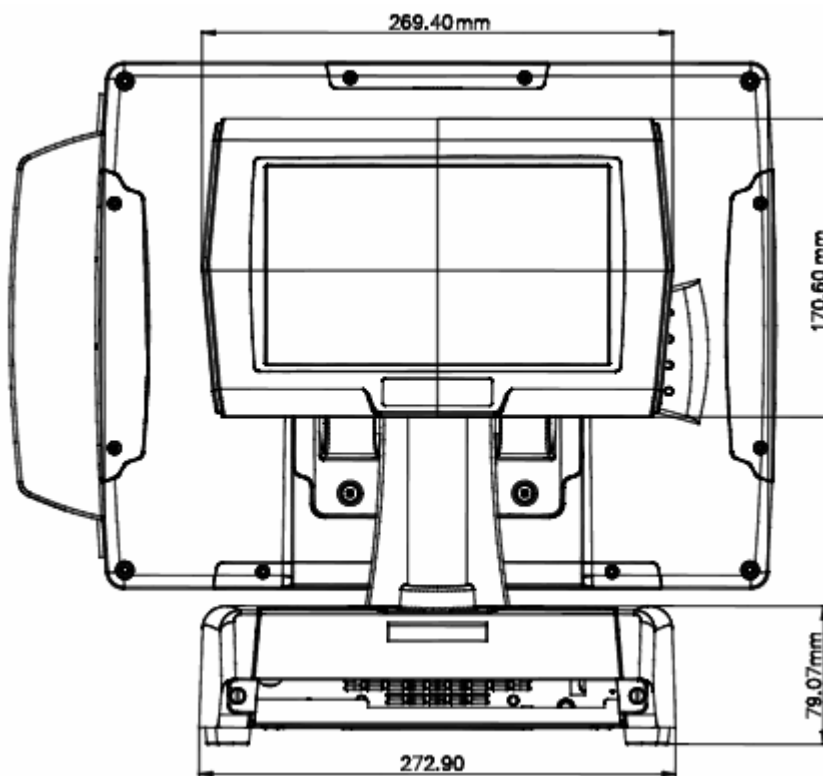
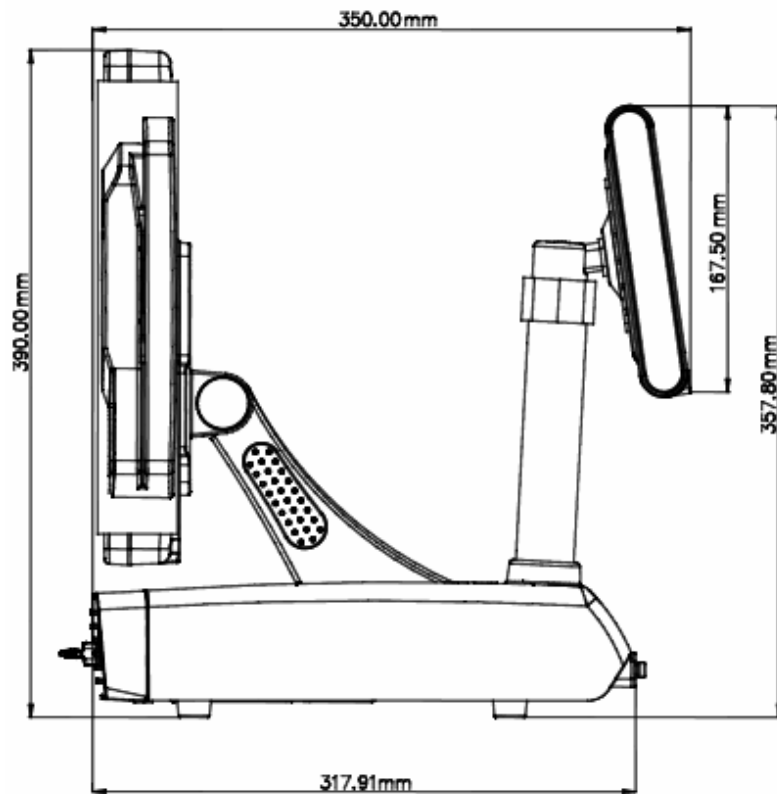
### P1000 Dimensions



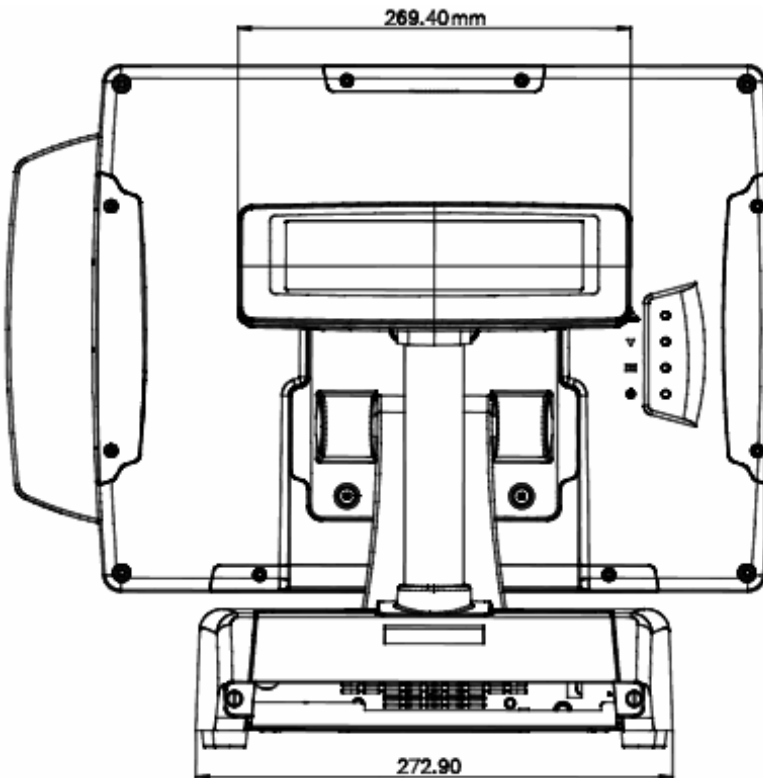
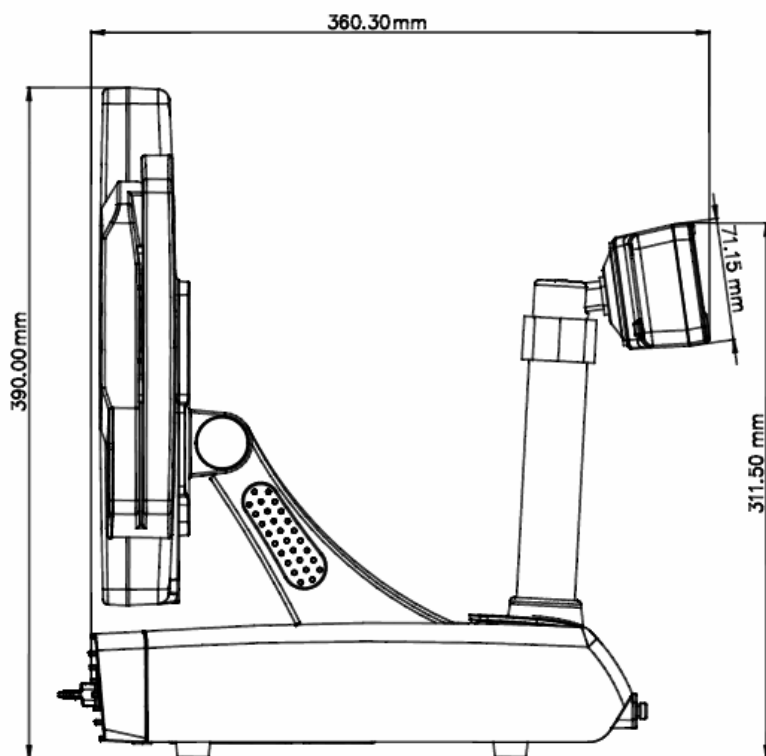
### P1000 and MSR Dimensions



## P1000 and 15cm 8.9" Pole Display Dimensions



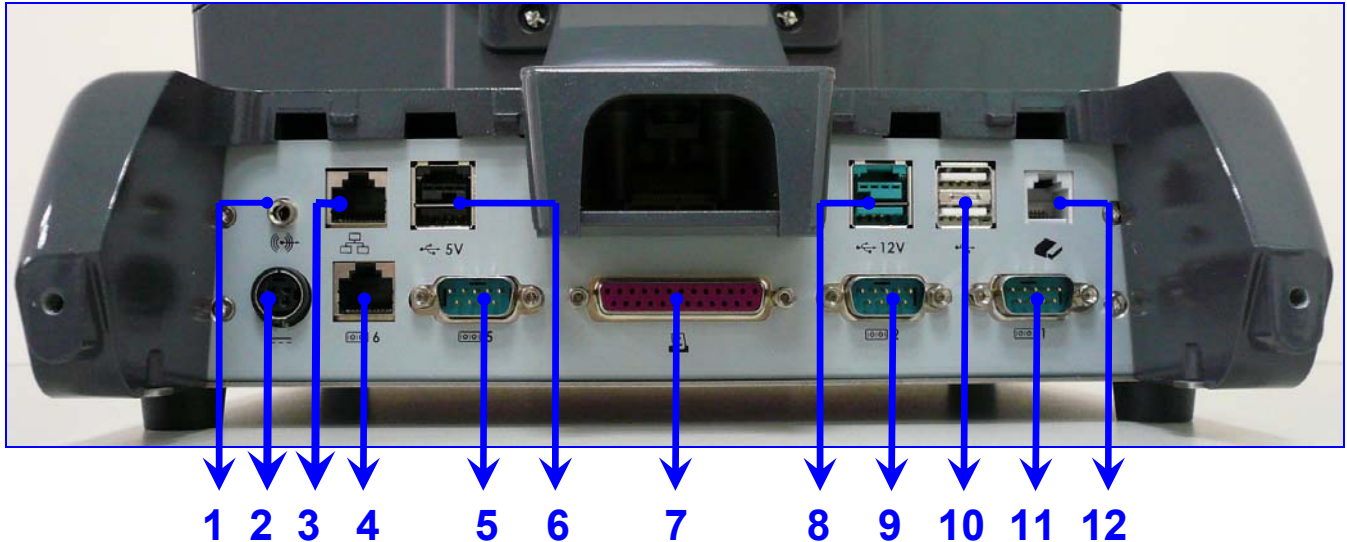
## P1000 and 15cm VFD Pole Display Dimensions



# Connector Panels

## Primary Connector Panel

The primary connector panel is located at the bottom of the base.



ITEM	I/O Port	Connector Type	Description
1	Audio Line Out	2 PIN Socket	This port connects an external audio output device.
2	POWER	DC Power Connector	Connects P1000 to the power supply.
3	LAN	LAN RJ-45 Connector	It is a Giga LAN port which is used to hook P1000 to a local area network.
4	COM6	RJ-45 Connector	The serial port COM6 can be used to connect serial devices such as a mouse or a VFD customer display.
5	COM5	DSUB Connector	The serial ports COM5 can be used to connect serial devices such as a mouse or a fax/modem.
6	5V Power USB	Power USB Connector	USB port with 5V for USB peripherals. It can reduce cable.
7	LPT1	Parallel Connector	The parallel port LPT1 can be used to connect parallel devices, such as a printer.
8	12V Power USB	Power USB Connector	USB port with 12V for USB peripherals. It can reduce cable.
9	COM2	DSUB Connector	The serial ports COM2 can be used to connect serial devices such as a mouse or a fax/modem.
10	USBX2	USB Connector	The USB (Universal Serial Bus) port can be used to connect USB devices.
11	COM1	DSUB Connector	The serial ports COM1 can be used to connect serial devices such as a mouse or a fax/modem.
12	Cash Drawer	RJ-11 Connector	Cash Drawer Connector, 12 V or 24V Actuation support for solenoid.

## Second Connector Panel

The second connector panel is located on the front side of the base.



ITEM	I/O Port	Connector Type	Description
1	USB	USB TYPE A	The USB (Universal Serial Bus) port can be used to connect USB devices.
2	Power Button w/LED	POWER SWITCH	ATX Power Switch function. The LED stands power on or power off. (Green: ON / Dark : OFF).

## Chapter 2 Hardware Setup

### P1000 Assembly

#### Warnings and Cautions

Before performing hardware upgrades be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.



**WARNING!** To reduce the risk of personal injury from electrical shock, hot surfaces, or fire:

Disconnect the power cord from the wall outlet and allow the internal system components to cool before touching.

Do not plug telecommunications or telephone connectors into the network interface controller receptacles.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature. Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.



**CAUTION:** Static electricity can damage the electrical components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

When the computer is plugged into an AC power source, voltage is always applied to the main board. You must disconnect the power cord from the power source before opening the computer to prevent damage to internal components.

---

## Installing CPU box

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.



**CAUTION:** To prevent loss of work and damage to the system or drive:

If you are inserting or removing a drive, shut down the operating system properly, turn off the system, and unplug the power cord. Do not remove a drive while the system is on or in standby mode.

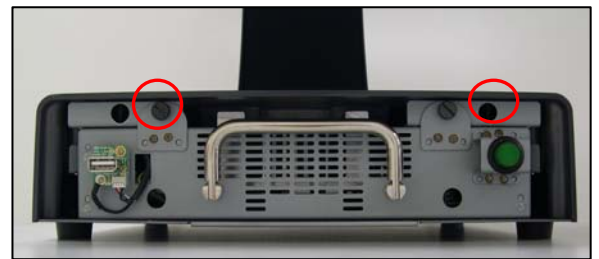
Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.



4. Push the CPU box into the base of system, and ensure that the CPU box is fully docked with the internal connector at the back of system unit.



5. Raise the handle, as indicated, and make sure that the 2 thumb screws, as shown, are locked..(The 2 thumb screws are placed in Accessory box.)





**6. Attach the Magnetic front base cover into system unit.**




**7. Connect the power cord and any external devices, then turn on the system.**

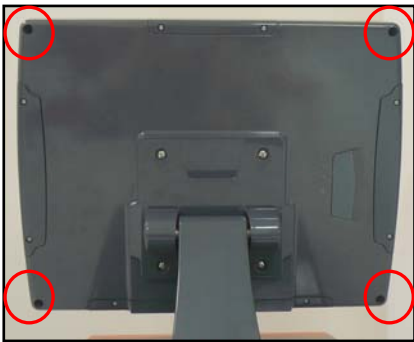


## Changing Front Panel Cover

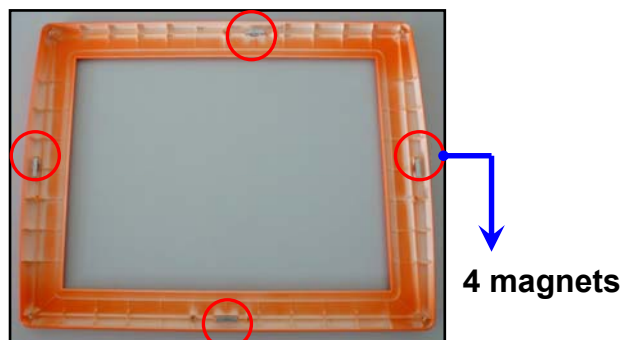
1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Release 4 screws that secure the front panel cover to the system unit.



5. Detach the front panel cover from system unit.



**6. Attach the Magnetic front panel cover into system unit.**




**7. Press the front panel cover into place completely.**



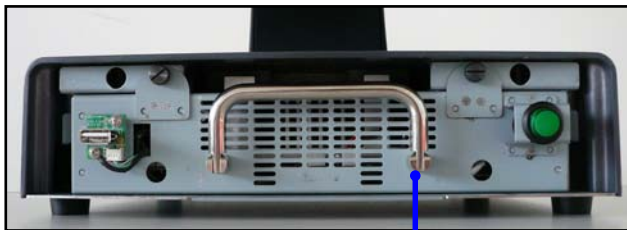
**8. Replace 4 screws that secure the front panel cover to the system unit.**

## Changing Front Base Cover

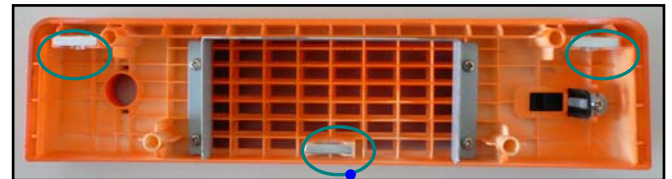
1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Detach the front base cover.

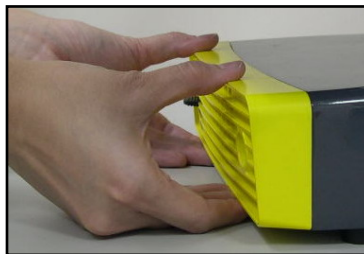
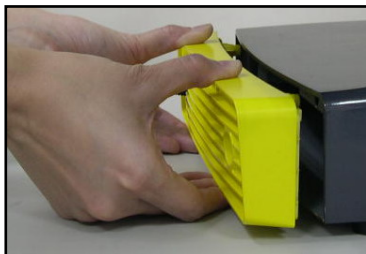


CPU box handle



3 magnets

5. Attach the magnetic front base cover into system unit.



## Removing the CPU box and box cover

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.



**CAUTION:** To prevent loss of work and damage to the system or drive:

If you are inserting or removing a drive, shut down the operating system properly, turn off the system, and unplug the power cord. Do not remove a drive while the system is on or in standby mode.

Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

4. Detach the front base cover.



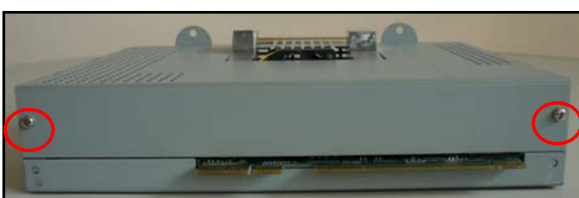
5. Remove 2 thumb screws that secure the CPU box.



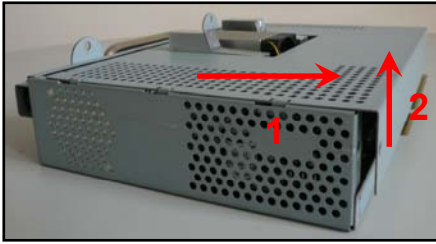
6. Pull out the CPU box.



7. Remove 2 screws on the rear of CPU box that secure the cover to the box chassis.

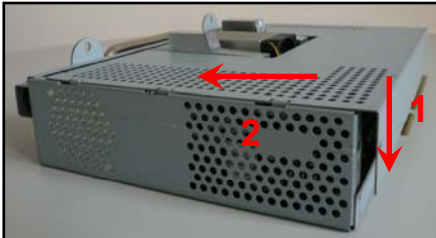


- 8. Slide the CPU box cover then lift it off the box unit .**

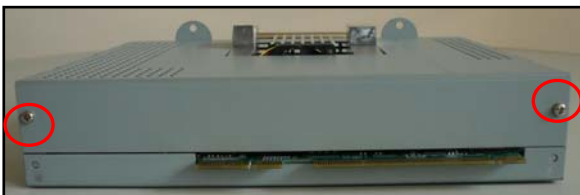


## Replacing the CPU box cover

- 1. Place the CPU box cover on the chassis in front of the final position and slide it back into place until it stops.**



- 2. Replace the 2 screws that secure the CPU box cover to the chassis.**





## Installing UPS

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

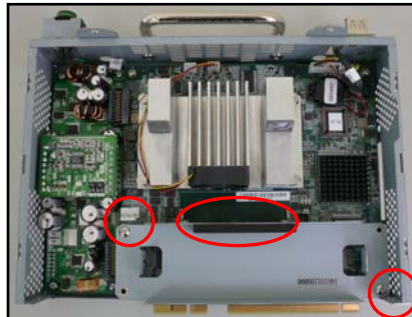
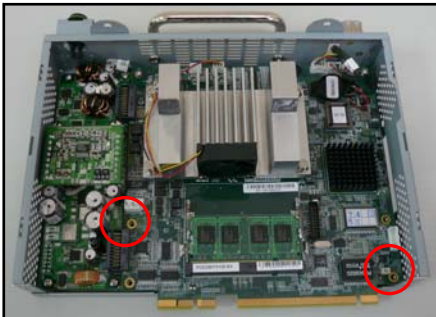


**CAUTION:** To prevent loss of work and damage to the system or drive:

If you are inserting or removing a drive, shut down the operating system properly, turn off the system, and unplug the power cord. Do not remove a drive while the system is on or in standby mode.

Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

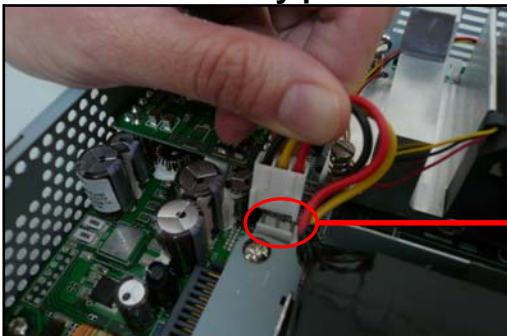
4. Remove the CPU box and CPU box cover.
5. Secure battery holder with 2 screws, and place the rubber battery support.



6. Put the battery pack into battery box, and locate the battery pack power cable.



7. Connect the battery pack to CN14 and ensuring correct polarity.



**CN14**

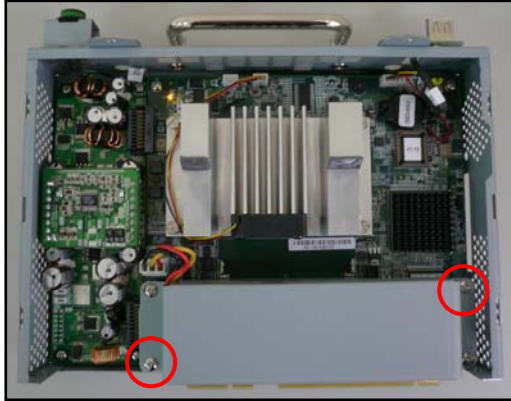




**NOTE:** Before connecting the battery connector cable to main board, please refer to page 32 External BAT connector pin description.

---

**8. Secure battery box cover with 2 screws.**



**9. Replace CPU box cover and CPU box.**

**10. Replace the front base cover.**

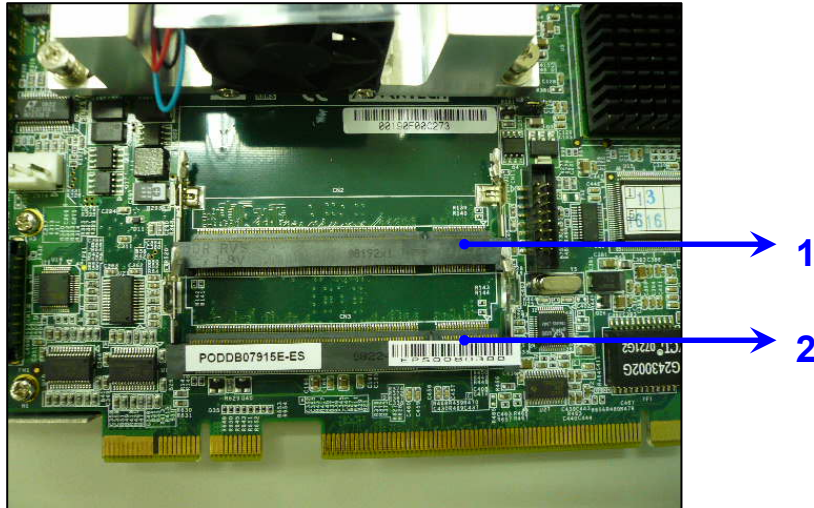
**11. Reconnect the power cord and any external devices, then turn on the system.**

## Installing Additional Memory Card

The memory sockets on the main board can be populated with up to two industry-standard DIMMs. These memory sockets are populated with at least one preinstalled DIMM. To achieve the maximum memory support, you can populate the main board with up to 2-GB of memory.

### Populating DIMM Sockets

There are two DIMM sockets on the main board. The sockets are labeled CN2 and CN3.



ITEM	Description	Socket Color
1	CN2 socket	Black
2	CN3 socket (populate first)	Black

### Installing DIMMs


**CAUTION:** You must disconnect the power cord and wait approximately 30 seconds for the power to drain before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the system is plugged into an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or main board. If you see an LED light on the main board, voltage is still present.

The memory module sockets have gold-plated metal contacts. When upgrading the memory, it is important to use memory modules with gold-plated metal contacts to prevent corrosion and/or oxidation resulting from having incompatible metals in contact with each other.

Static electricity can damage the electronic components of the system or optional cards. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.


When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.


---

#### 4. Remove the CPU box and CPU box cover.

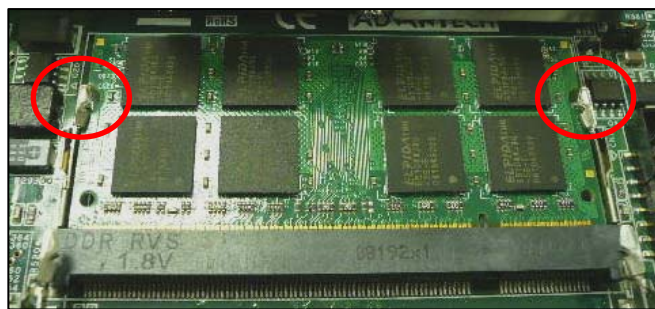
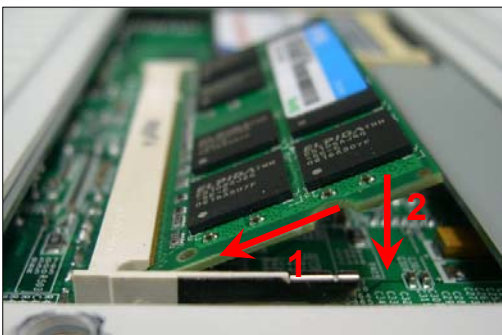
 **NOTE:** If the system is installed UPS, must first be removed battery connector and battery pack away, finally able to see memory sockets. Please refer to page 21 Installing UPS.


---

#### 5. Locate the memory sockets on the main board.

 **WARNING!** To reduce risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

- 
6. Insert the memory module into the socket, and push the module down, ensuring that the module is fully inserted and properly seated. Make sure the latches are in the closed position.



 **NOTE:** A memory module can be installed in only one way. Match the notch on the module with the tab on the memory socket.

- 
7. Repeat step 6 install any additional modules.
  8. Replace the CPU box cover and CPU box.
  9. Replace the front base cover.
  10. Reconnect the power cord and any external devices, then turn on the system. The system should automatically recognize the additional memory when you turn on the system.

## Removing and Replacing the SATA Hard Disk



**NOTE:** The system does not support Parallel ATA (PATA) hard drives.

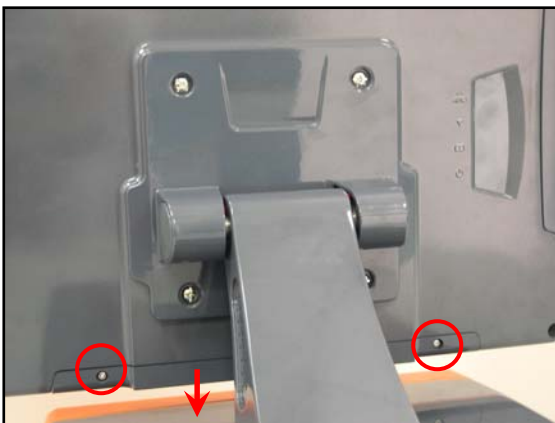
Before you remove the old hard drive, be sure to back up the data from the old hard drive so that you can transfer the data to the new hard drive. Also, if you are replacing the primary hard drive, make sure you have a Recovery Disc Set to restore the operating system, software drivers, and any software applications that were preinstalled on the system.

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.



**CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Remove 2 screws and unplug HDD cover.



5. Remove 2 screws that secure the HDD tray holder, and pull out the HDD box.



6. Remove 4 screws at both sides, and remove the hard disk.



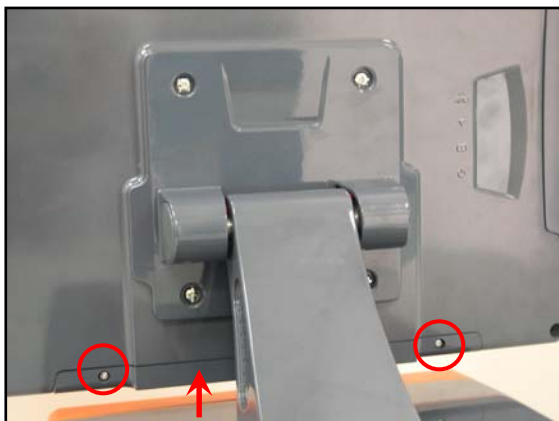
**7. Replace new Hard Disk to the HDD tray holder, and secure the screw.**

**8. Insert the HDD box into the socket, ensuring that the HDD box is fully inserted and properly seated.**



**9. Replace 2 screws that secure the HDD tray holder.**

**10. Replace the HDD cover and 2 screws.**




**11. Reconnect the power cord and any external devices, then turn on the system.**

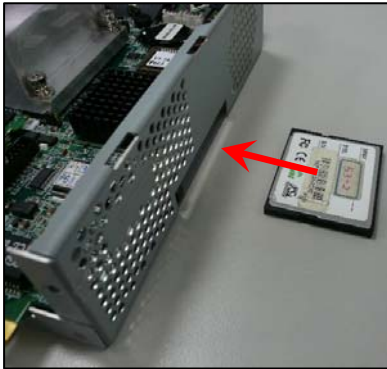


## Installing Compact Flash Card

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Remove the CPU box.
5. Locate the CF card socket in the side of CPU box.



6. Insert the CF card into the socket, until the card back button up.



7. Replace the CPU box.
8. Replace the front base cover.
9. Reconnect the power cord and any external devices, then turn on the system. The system should automatically recognize the CF card device when you turn on the system.




**NOTE:** CF card and 2.5" HDD master/slave setting:

P1000 allow the use of CF card and hard disk at the same time, but user need to set the system BIOS to boot the order. When P1000 installed only the CF card, or just install 2.5 "hard disk, BIOS will be automatically be designated as a 'master' as a system boot device.

## Installing MSR/Fingerprint/I-Button module

An optional 2-in-1(Magnetic Stripe Reader + Fingerprint Reader) or 2-in-1(Magnetic Stripe Reader + I-Button Reader) can be installed on the right side of P1000.

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Remove the 2 screws and expansion cover that on rear of the main unit.



5. Plug the MSR.



MSR top view



MSR bottom view



6. Replace the 2 screws that secure the MSR to the main unit.




7. Reconnect the power cord and any external devices, then turn on the system.



## Installing 8.9" pole display and VFD pole display

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Remove 2 thumb screw and IO cover.



5. Remove the screw and secondary display cover.



6. Secure pole display module.



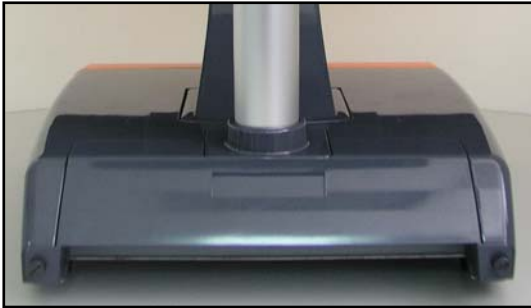
VFD 15cm pole display



8.9" 15cm pole display



- 7. Replace the I/O Cover and thumb screws.**



- 8. Reconnect the power cord and any external devices, then turn on VFD/LCD power, Finally, turn on the system power.**

**P1000 and 8.9" 15cm pole display full view**



**P1000 and VFD 15cm pole display full view**



## Installing Cash Drawer



**NOTE:** Before connecting the cash drawer to P1000, please make sure the driver voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of P1000. Please refer to page 36 Cash Drawer Power Select Connector.

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.



**CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Plug cash drawer cable into cash drawer port.

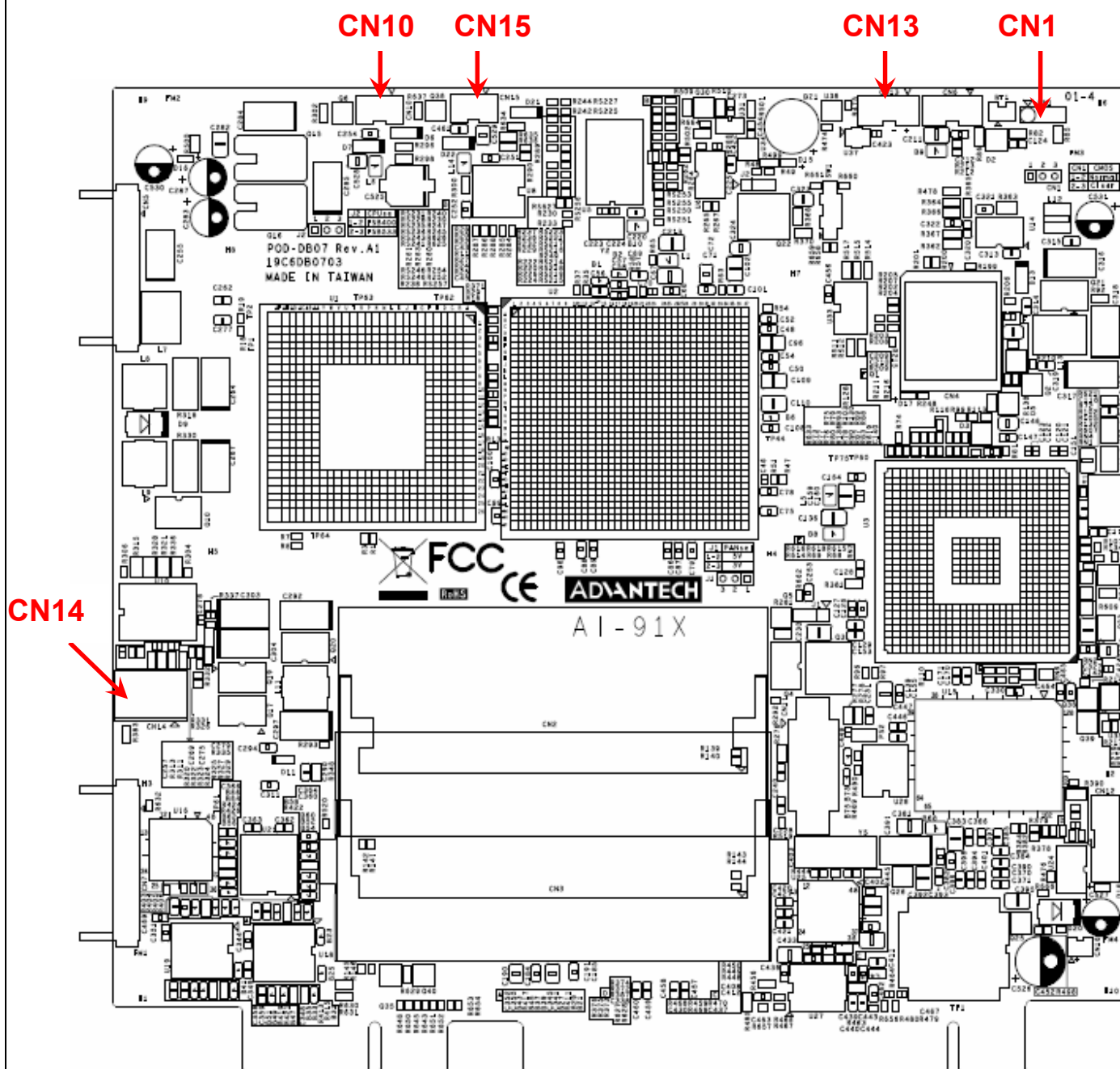


Cash Drawer port

5. Reconnect the power cord and any external devices, then turn on the system.

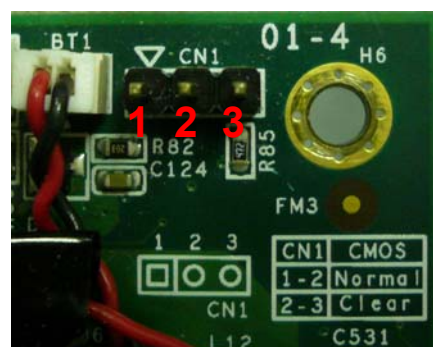
# Main Board Configuration

## Main Board Pin Definition



**CN1** Clear CMOS connector

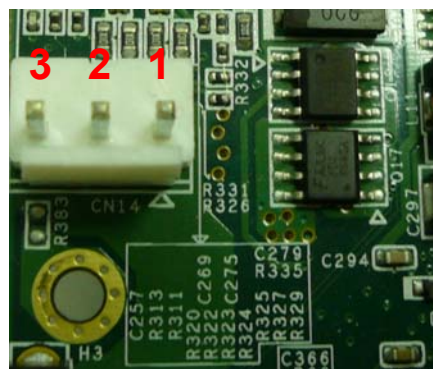
CN1 Jumper	Function
1-2	Default
2-3	Clear CMOS



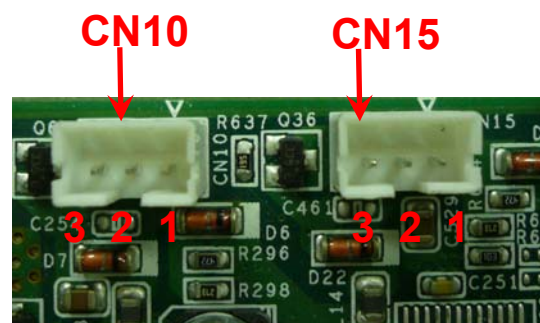


**CN14***External BAT connector*

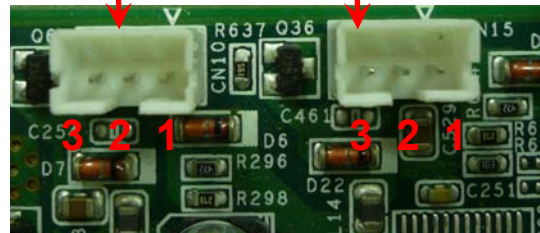
PIN No.	Description
1	BAT+
2	BAT_T+
3	GND

**CN10***CPU Fan connector*

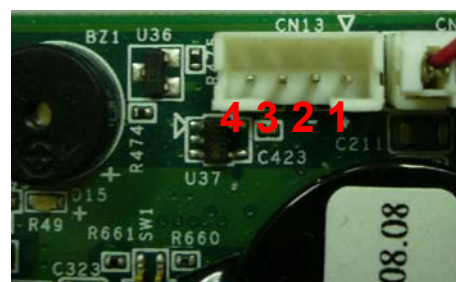
PIN No.	Description
1	FAN_IO1
2	FAN1_12V
3	FAN_PWM1

**CN15***System Fan connector*

PIN No.	Description
1	FAN_IO2
2	FAN2_12V
3	FAN_PWM2


**CN13***Power Button connector*

PIN No.	Description
1	+V5SB
2	PANSWIN
3	+V3.3
4	GND

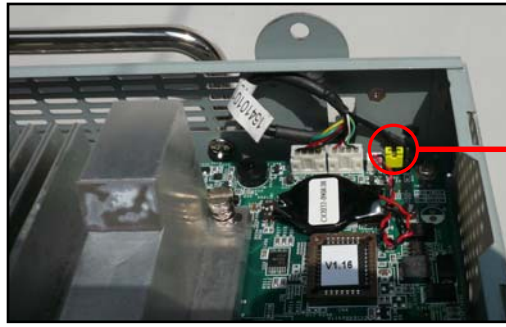
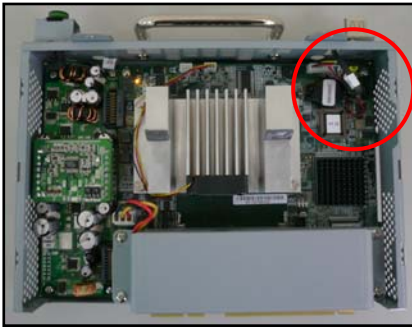


## Clearing CMOS

1. Remove all removable media, such as compact discs, from the system unit.
2. Turn off the system power properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

 **CAUTION:** Regardless of the power-on state, voltage is always present on the main board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the system.

4. Remove the CPU box and CPU box cover.
5. Locate CN1 connector on the main board.



**NOTE:** Before setting jumper in the CN1 connector. Please refer to page 33 CN1 Jumper Function.

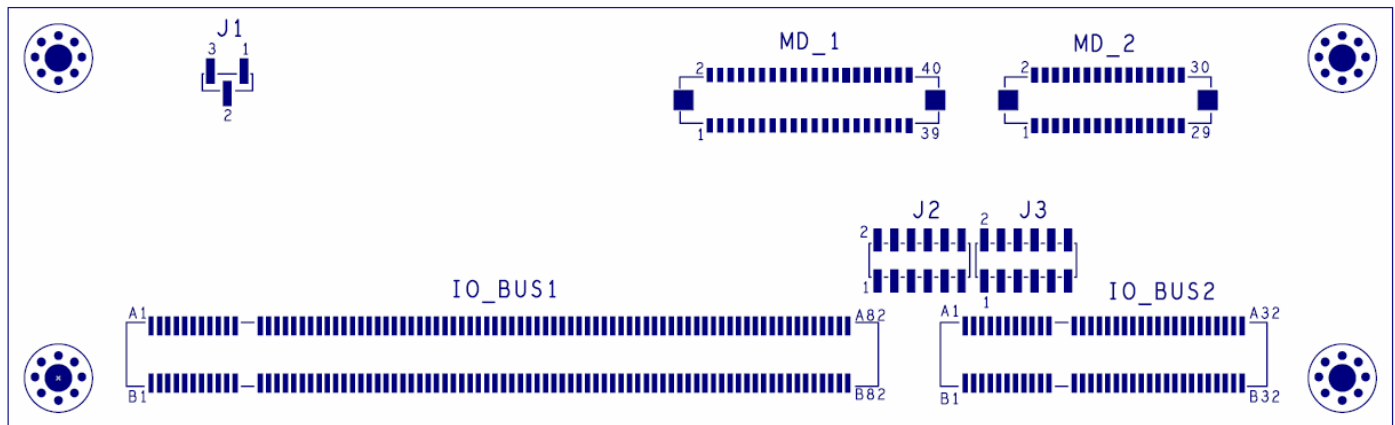
6. Replace the CPU box cover and CPU box.
9. Reconnect the power cord and any external devices, then turn on the system.

## I/O Board Configuration

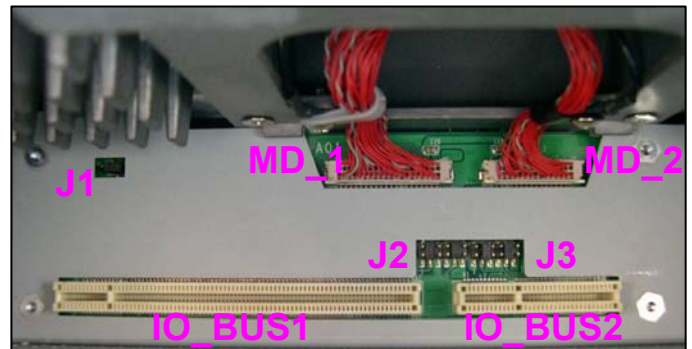
The IOTR board transform signals form main board to TOP IO board and Bottom IO board.

### IOTR Board Pin Definition

Top side faces the PC box



Locate the Power I/O Jumpers inside the System case.



#### **J1** Cash Drawer Power Select Connector

PIN No.	Description
1	12V
2	Drawer Power Select
3	24V

Select Cash Drawer Power as shown in the table

J1	
1-2 Short	12V (Default)
2-3 Short	24V



**J2****COM1 & COM2 Power Select Connector**

PIN No.	Description	PIN No.	Description
1	5V	7	5V
2	RIA	8	RIB
3	RI_A	9	RI_B
4	RIA	10	RIB
5	12V	11	12V
6	RIA	12	RIB

**J3****COM5 & COM6 Power Select Connector**

PIN No.	Description	PIN No.	Description
1	5V	7	5V
2	RIE	8	RIF
3	RI_E	9	RI_F
4	RIE	10	RIF
5	12V	11	12V
6	RIE	12	RIF

Select COM Port Power as shown in the table

Connector	COM Port	Connect	Description
J2	COM1	3-4	RI*
		1-2	+5V
		5-6	+12V
	COM2	9-10	RI*
		7-8	+5V
		11-12	+12V
J3	COM5	3-4	RI*
		1-2	+5V
		5-6	+12V
	COM6	9-10	RI*
		7-8	+5V
		11-12	+12V

(Default: RI\* signal)

**MD\_1***Display I/O Connector*

PIN No.	Description	PIN No.	Description
1	SPK_R+	2	GND
3	SPK_R-	4	GND
5	PVDD	6	PVDD
7	RX00-	8	RX00+
9	RX01-	10	RX01+
11	GND	12	GND
13	RX02-	14	RX02+
15	RXOCLK-	16	RXOCLK+
17	GND	18	GND
19	RX03-	20	RX03+
21	GND	22	GND
23	12V	24	ON/OFF
25	12V	26	LCD_ADJ
27	12V	28	GND
29	UD5-	30	UD5+
31	GND	32	GND
33	UD6-	34	UD6+
35	5V	36	5V
37	NC	38	NC
39	KB-CK	40	KB-DA

**MD\_2***Display I/O Connector*

PIN No.	Description	PIN No.	Description
1	SPK_L+	2	SPK_L-
3	5V	4	5V
5	5V	6	5V
7	5V	8	5V
9	12V	10	12V
11	UD7-	12	UD7+
13	SA0_TXP	14	SA0_TXN
15	GND	16	GND
17	SA0_RXN	18	SA0_RXP
19	TX_C	20	GND
21	RX_C	22	GND
23	RTS_C	24	GND

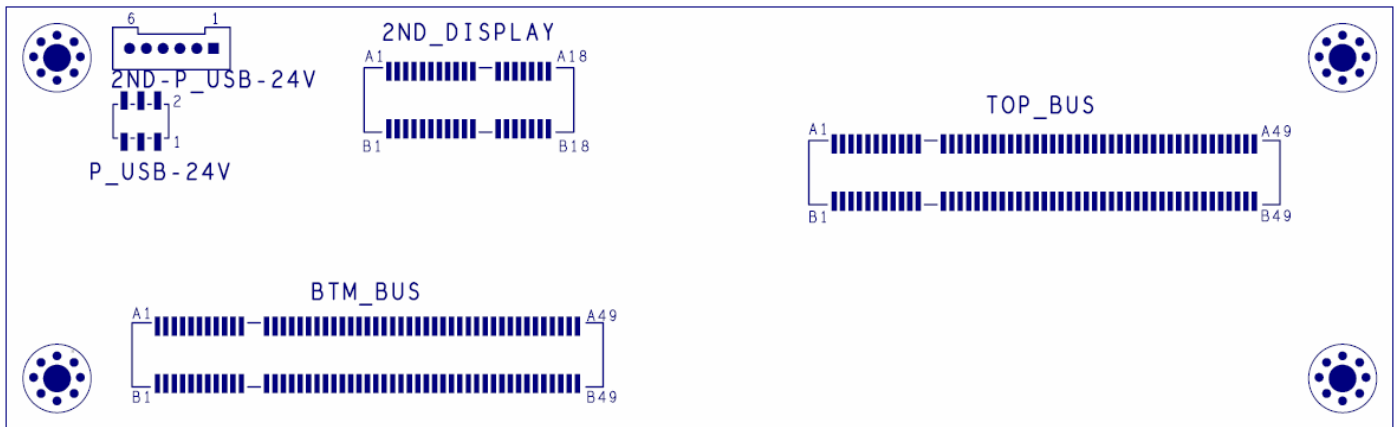
25	CTS_C	26	GND
27	DSR_C	28	GND
29	DTR_C	30	GND

**IO\_BUS1**

**IO\_BUS2**

*I/O BUS1(164 PIN) & IO BUS2 (64 PIN) PCI Express Connector connect to the main board GF1 & GF2.*

**Bottom side faces the I/O Connector**



**2ND\_DISPLAY**

*Second Display 36 PIN PCI Express Connector*

PIN No.	Description	PIN No.	Description
A1	DSR_D	B1	DTR_D
A2	RTS_D	B2	CTS_D
A3	TX_D	B3	RX_D
A4	GND	B4	GND
A5	GND	B5	GND
A6	NC	B6	GND
A7	12V	B7	GND
A8	12V	B8	NC
A9	12V	B9	5V
A10	12V	B10	5V
A11	12V	B11	5V
A12	GND	B12	GND
A13	GND	B13	GND

A14	DDCCLK	B14	VSYNC
A15	DDCDAT	B15	HSYNC
A16	BLUE	B16	GND
A17	GRN	B17	GND
A18	RED	B18	GND

## TOP\_BUS

*TOP\_BUS 98 PIN PCI Express Connector connects to the TOP IO board TOP\_BUS Golden Finger.*

PIN No.	Description	PIN No.	Description
A1	GND	B1	GND
A2	GND	B2	GND
A3	NC	B3	VSYNC
A4	DTR_D	B4	HSYNC
A5	DSR_D	B5	DDCCLK
A6	CTS_D	B6	DDCDAT
A7	RTS_D	B7	BLUE
A8	RX_D	B8	GRN
A9	TX_D	B9	RED
A10	NC	B10	GND
A11	GND	B11	GND
A12	5V	B12	12V
A13	5V	B13	12V
A14	5V	B14	12V
A15	5V	B15	12V
A16	NC	B16	NC
A17	GND	B17	GND
A18	GND	B18	LINE_HP
A19	GND	B19	LINEO_L
A20	GND	B20	LINEO_R
A21	GND	B21	GND
A22	GND	B22	GND
A23	GND	B23	GND
A24	LAN_L2-	B24	GND
A25	LAN_L2+	B25	UD4+
A26	LAN_L1-	B26	UD4-
A27	LAN_L1+	B27	GND
A28	LAN3-	B28	UD3+
A29	LAN3+	B29	UD3-
A30	LAN2-	B30	GND

A31	LAN2+	B31	UD2+
A32	LAN1-	B32	UD2-
A33	LAN1+	B33	GND
A34	LAN0-	B34	UD1+
A35	LAN0+	B35	UD1-
A36	GND_LAN	B36	GND
A37	GND	B37	OUT1
A38	IN_0	B38	OUT0
A39	5V	B39	Drawer Power Select
A40	5V	B40	Drawer Power Select
A41	5V	B41	NC
A42	5V	B42	GND
A43	NC	B43	GND
A44	12V	B44	GND
A45	12V	B45	GND
A46	12V	B46	GND
A47	12V	B47	GND
A48	12V	B48	GND
A49	12V	B49	GND

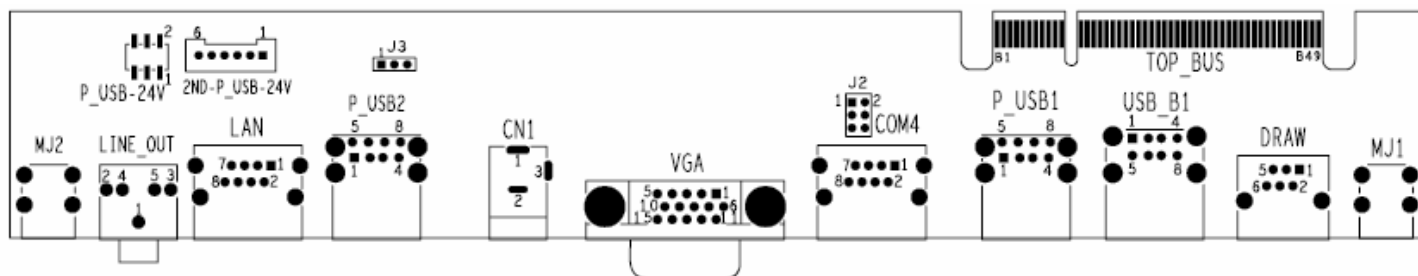
### BTM\_BUS

*BTM\_BUS 98 PIN PCI Express Connector connects to the BOTTOM IO board BTM\_BUS Golden Finger.*

PIN No.	Description	PIN No.	Description
A1	GND_FIELD	B1	DC_IN
A2	GND_FIELD	B2	DC_IN
A3	GND_FIELD	B3	DC_IN
A4	GND_FIELD	B4	DC_IN
A5	GND_FIELD	B5	DC_IN
A6	GND_FIELD	B6	DC_IN
A7	GND_FIELD	B7	DC_IN
A8	GND_FIELD	B8	DC_IN
A9	GND_FIELD	B9	DC_IN
A10	GND_FIELD	B10	DC_IN
A11	GND_FIELD	B11	DC_IN
A12	DTR_F	B12	RX_F
A13	DSR_F	B13	TX_F
A14	CTS_F	B14	DCD_F
A15	RIF	B15	RTS_F

A16	RIE	B16	RTS_E
A17	DTR_E	B17	RX_E
A18	DSR_E	B18	TX_E
A19	CTS_E	B19	DCD_E
A20	GND	B20	GND
A21	GND	B21	PSLCT
A22	PPE	B22	PBUSY
A23	PACKX	B23	PD7
A24	PD6	B24	PD5
A25	PD4	B25	PD3
A26	PSLINX	B26	PD2
A27	PINITX	B27	PD1
A28	PERX	B28	PD0
A29	PAFDX	B29	PSTBX
A30	GND	B30	GND
A31	GND	B31	GND
A32	NC	B32	NC
A33	12V	B33	5V
A34	12V	B34	5V
A35	12V	B35	5V
A36	12V	B36	5V
A37	NC	B37	NC
A38	GND	B38	GND
A39	GND	B39	GND
A40	GND	B40	GND
A41	GND	B41	GND
A42	RIB	B42	DTR_B
A43	CTS_B	B43	TX_B
A44	RTS_B	B44	RX_B
A45	DSR_B	B45	DCD_B
A46	RIA	B46	RTS_A
A47	DTR_A	B47	RX_A
A48	DSR_A	B48	TX_A
A49	CTS_A	B49	DCD_A

## Top IO Board Pin Definition



TOP IO board covers the I/O ports to the IOTR board. Including: audio port, LAN, Cash Drawer, 5V power USB, 12V power USB, USB.

### LINE\_OUT

*Audio line output EAR Connector*

PIN No.	Description
1	GND_SP
2	LO_R
3	LO_L
4	LO_HP
5	NC

### LAN

*RJ-45 LAN Port*

PIN No.	Description	PIN No.	Description
1	LAN0+	2	LAN0-
3	LAN1+	4	LAN2+
5	LAN2-	6	LAN1-
7	LAN3+	8	LAN3-

### P\_USB2

*5V Power USB Port*

PIN No.	Description	PIN No.	Description
1	5V	2	UD2-
3	UD2+	4	GND
5	GND	6	5V
7	5V	8	GND

**P\_USB1***12V Power USB Port*

PIN No.	Description	PIN No.	Description
1	5V	2	UD1-
3	UD1+	4	GND
5	GND	6	12V
7	12V	8	GND

**USB\_B1***USB Port*

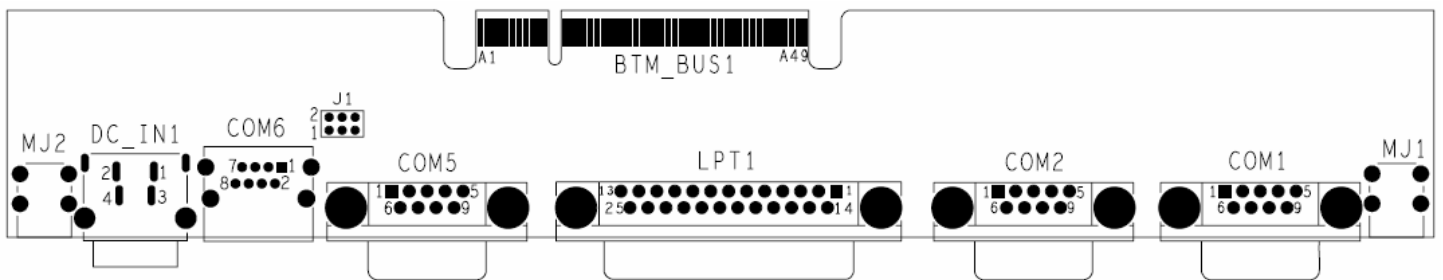
PIN No.	Description	PIN No.	Description
1	5V	2	UD3-
3	UD3+	4	GND
5	5V	6	UD4-
7	UD4+	8	GND

**DRAW***RJ-11 Cash drawer Port*

PIN No.	Description	PIN No.	Description
1	GND	2	DGO_0
3	IN_0	4	V_DRAW
5	DGO_1	6	GND



## Bottom IO Board Pin Definition



BOTTOM IO board covers the I/O ports to the IOTR board. Including: DC IN, RJ-45 COM6, COM1, COM2, COM5, LPT1.

### **J1** COM6&VFD select Connector

PIN No.	Description	PIN No.	Description
1	RTS_F	2	CTS_F
3	RTSF	4	CTSF
5	GND	6	RI_F

### **COM6**

COM6 uses the RJ-45 connector to accept VFD customer display. If the customer display is not required, this port may function as an RS-232C port. An adapter cable to convert RJ-45 to DB-9 is placed in accessory box. Jumpers on the circuit board must also be reconfigured as shown in the table.

### Mode1 RJ-45 connector used for RS232 device (Default)

J3( IOTR board)	
7-8	Short (+5V)

J1(Bottom IO board)	
1-3	Short
2-4	Short

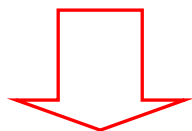
### RJ-45 Pin definitions

PIN No.	Description	PIN No.	Description
1	+5V	2	CTSF
3	GND	4	RTSF
5	DTRF	6	DSRF
7	TXF	8	RXF

## Mode2 RJ-45 connector used for VFD device

J3( IOTR board)	
11-12	Short (+12V)

J1(Bottom IO board)	
3-5	Short
4-6	Short



### RJ-45 Pin definitions

PIN No.	Description	PIN No.	Description
1	+12V	2	+12V
3	GND	4	GND
5	DTRF	6	DSRF
7	TXF	8	RXF

## DC\_IN1

*DC Power Jack connector*

PIN No.	Description
1	GND
2	DC_IN
3	GND
4	DC_IN

## COM1&COM2&COM5

*RS232 port COM1,COM2 and COM5 D-SUB connector*

PIN No.	Description
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

Pin9 signal can be selected as standard RI or DC power output depending on the IOTR board J2 and J3 jumper settings. The default settings are for RI.

**LPT1***Parallel port LPT1 SCSI connector*

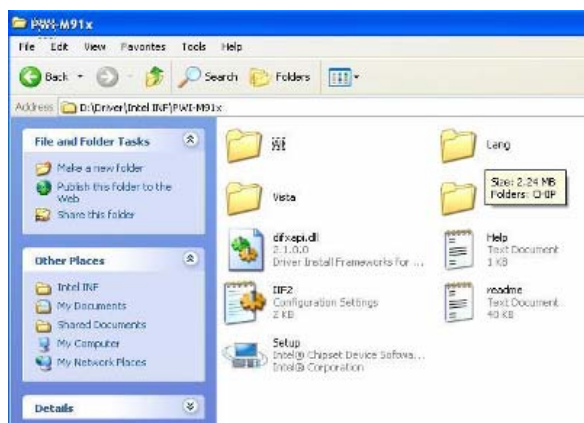
PIN No.	Description	PIN No.	Description
1	STBX	2	D0
3	D1	4	D2
5	D3	6	D4
7	D5	8	D6
9	D7	10	ACKX
11	BUSY	12	PE
13	SLCT	14	AFDX
15	ERX	16	INITX
17	SLINX	18	GND_LPT
19	GND_LPT	20	GND_LPT
21	GND_LPT	22	GND_LPT
23	GND_LPT	24	GND_LPT
25	GND_LPT		

## Chapter 3 Software Setup

### Driver Software List

Driver	Driver Setup Location
Intel Chipset	<CD>:\Driver\Intel INF\PWI-M91x
Intel Graphics	<CD>:\Driver\VGA\PWI-M91x
ELO Touch Screen	<CD>:\Driver\Touch\Elo
Abon Touch Screen	<CD>:\Driver\Touch\Abon
RealTek Audio	<CD>:\Driver\Audio\RealTek AC97
PCle GigaBit LAN	<CD>:\Driver\LAN\PCle_GLAN
802.11b/g Wireless	<CD>:\Driver\WLAN\802.11bg
USB RFID	<CD>:\Driver\RFID\USB driver
Fingerprint Reader	<CD>:\Driver\FingerPrint\UareU\DP Plat frsw 3.2
Cash Drawer and UPS	<CD>:\Driver\System
OPOS	<CD>:\Driver\OPOS

# Intel Chipset Driver Installation



1. Locate and Run the **Setup.exe** file on the CD in folder <CD>:\Intel INF\PWT-M91x

2. Click the Next button on the **Welcome** Screen.



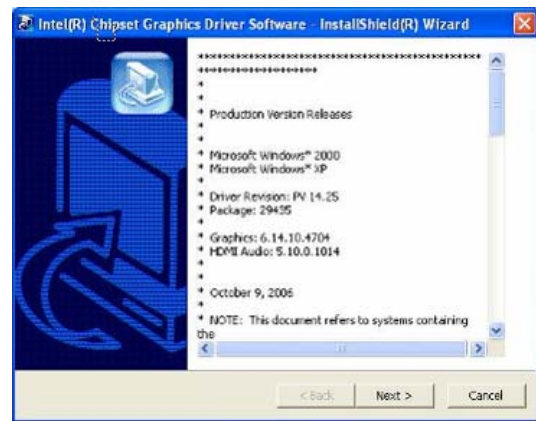
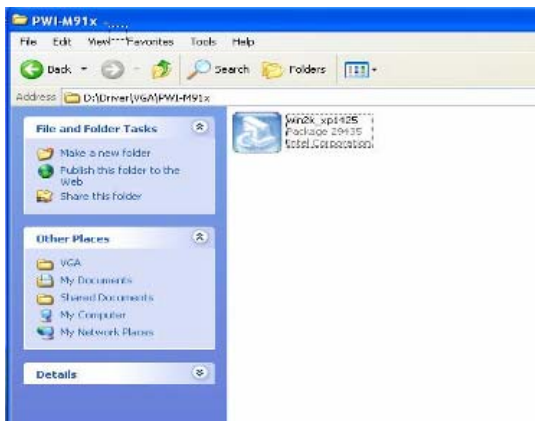
3. Click Yes on the **License Agreement** Screen.

4. Click **Next** on the **Information** Screen.



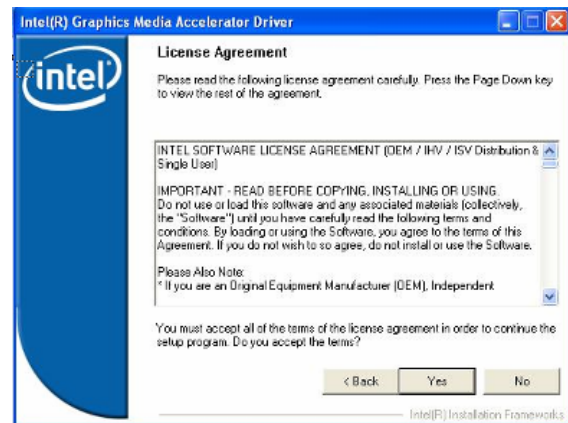
5. When **Installation** is complete, click **Finish**.

# Intel Graphics Driver Installation



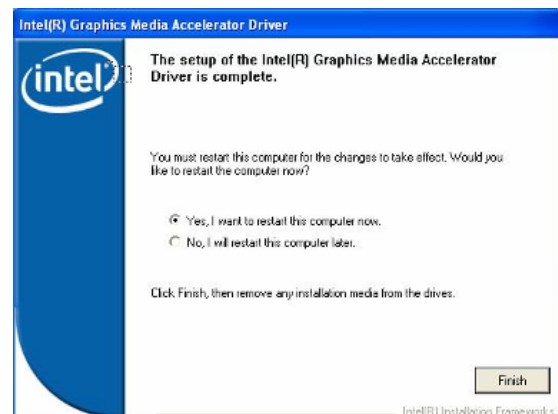
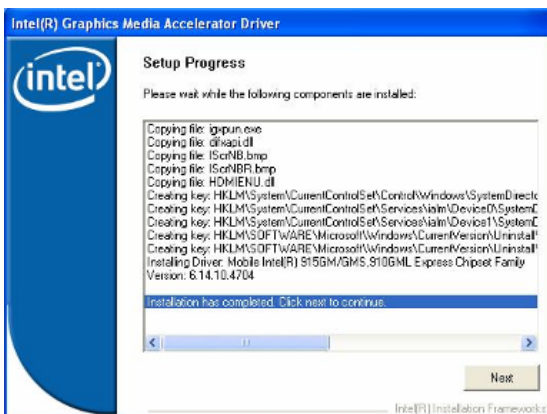
1. Locate and Run the **win2k\_xp1425.exe** file on the CD in folder <CD>:\VGA Driver\PWI-M91x

2. Click **Next** on the **Startup Screen**.



3. Click the **Next** button on the **Welcome Screen**.

4. Click **Yes** on the **License Agreement Screen**.



5. Click **Next** on the **Setup Progress Screen**.

6. When **Installation** is complete, click **Finish**.



# ELO Touch Screen Driver Installation



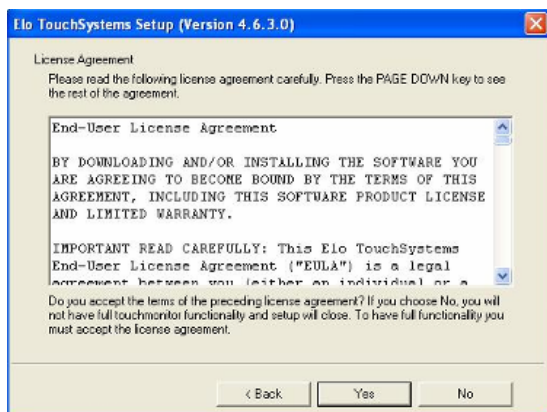
1. Locate and Run the **sw600188.exe** file on the CD in folder **<CD>:\Touch Driver\Elo**

2. Click **Unzip** on the **WinZip Self-Extractor Window**.



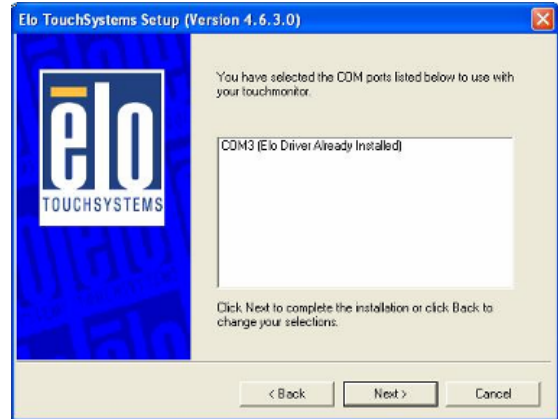
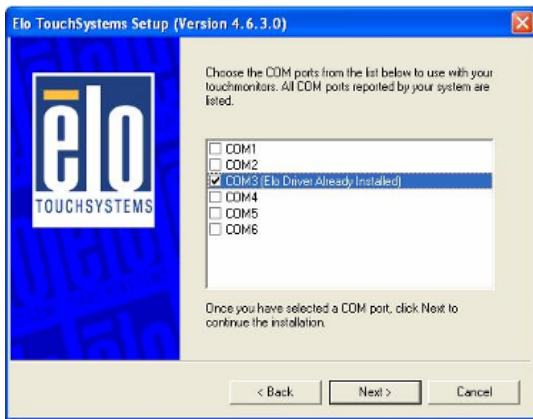
3. Select **Default** Installation Language then click **Next**.

4. Select **Install Serial Touchscreen Drivers** and then click **Next**.



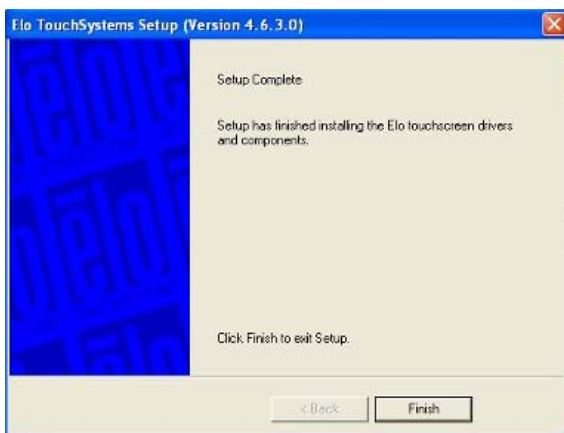
5. Click **Yes** on the **License Agreement Screen**.

6. Select **Auto-Detect Elo Device** then click **Next**.



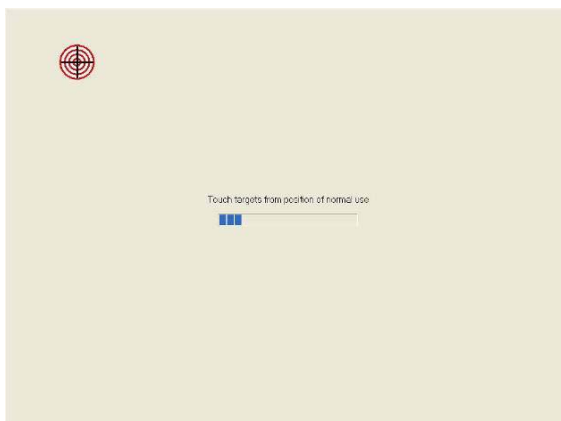
**7. Select *COM3* then click *Next*.**

**8. Click *Next*.**



**9. When *Installation* is complete, click *Finish* and *Restart the System*.**

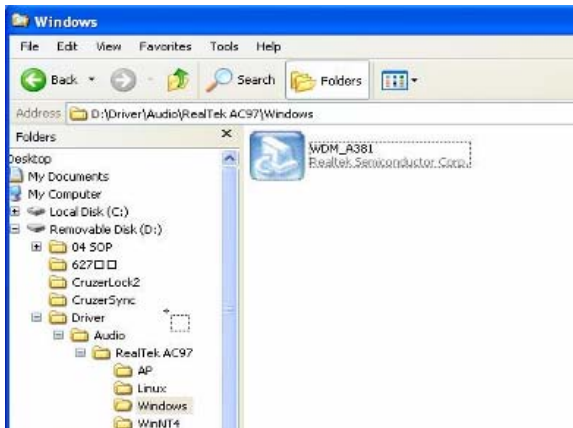
**10. After the computer has restarted, click *Align* on the *Elo Touchscreen Properties* Screen.**



**11. Calibrate the three red points as instructed.**

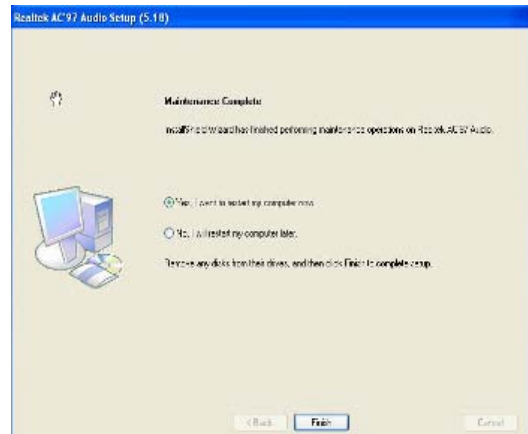


# Audio Driver Installation



**1. Locate and Run the *WDM\_A381.exe* file on the CD in folder <CD>:\Audio Driver\RealTek AC97**

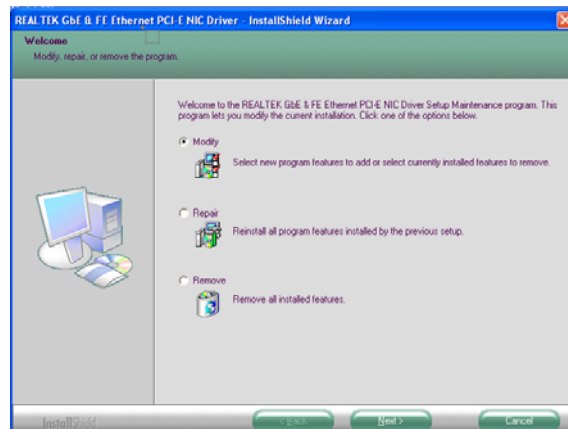
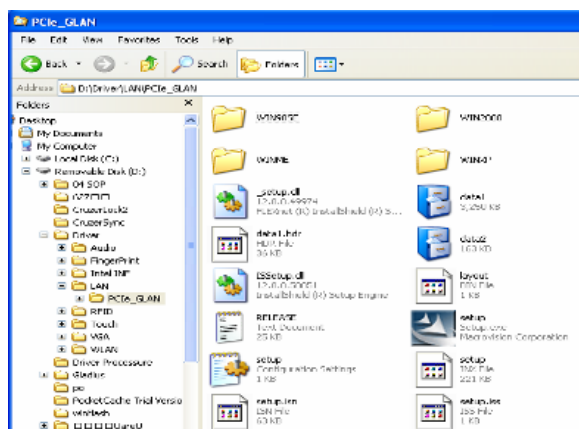
**2. Click *Next* on the *Welcome* Screen.**



**3. Click *Continue Anyway* on *Hardware Installation* Screen.**

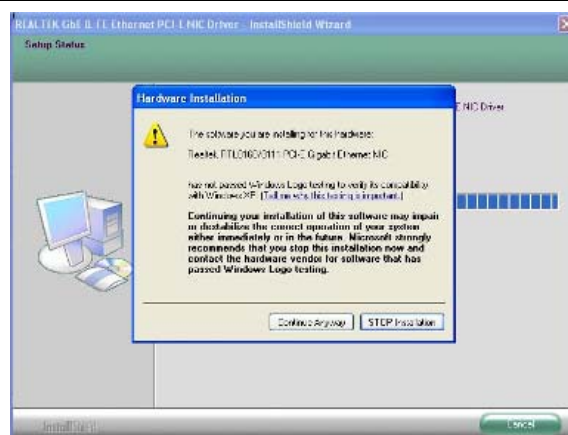
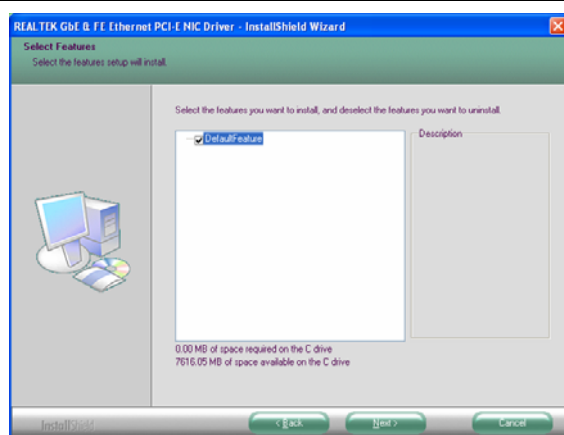
**4. When *Installation* is complete, click *Finish*.**

# Gigabit LAN Driver Installation



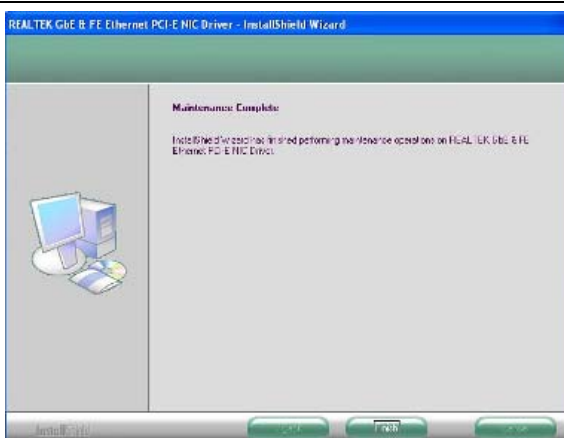
1. Locate and Run the **Setup.exe** file on the CD in folder <CD>:\LAN Driver\PCle\_GLAN

2. Select **Modify** then click **Next**.



3. Select **DefaultFeature** and click **Next**.

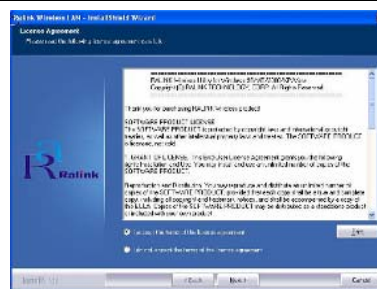
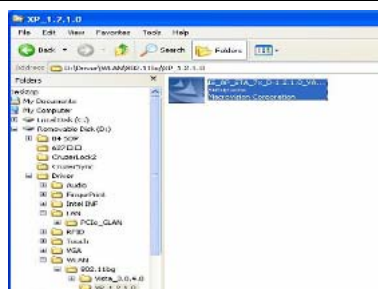
4. Click **Continue Anyway** on **Hardware Installation** Screen.



5. When **Installation** is complete, click **Finish**.

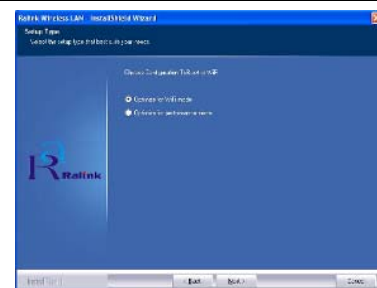
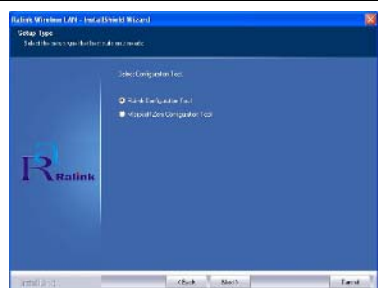
# Wireless LAN Driver Installation (optional)

## 1.First, plug in USB WLAN Interface Module.



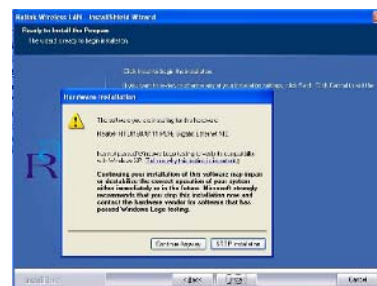
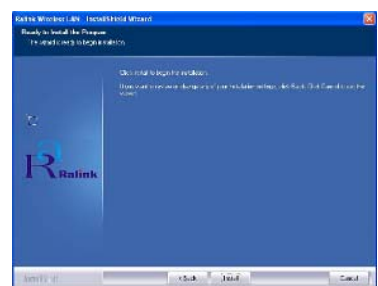
## 2.Locate and Run the Setup.exe file on the CD in folder <CD>:\ Driver\WLAN\ 802.11bg

## 3.Click *Next* on the *License Agreement* Screen.



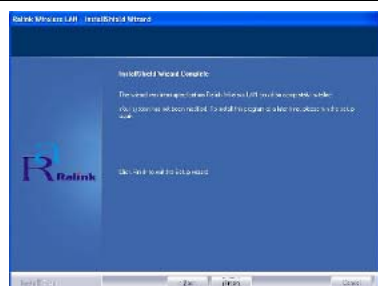
## 4.Select *Ralink Configuration Tool* then click *Next*.

## 5.Select *Optimize WiFi mode* then click *Next*.



## 6.Click *Install*.

## 7.Click *Continue Anyway* on *Hardware Installation* Screen.



## 8.When *Installation* is complete, click *Finish*.

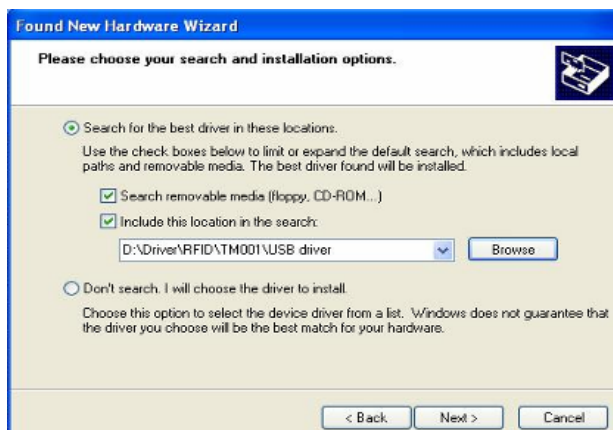
# RFID Driver Installation (optional)

1.Plug in USB RFID Module and wait for the following screen.



2.Select **Yes, this time only** and then click **Next**.

3.Select **Install from a list specific location** then click **Next**



4.Click **Next**

5.Click **Finish** to complete **USB Serial Converter Installation**

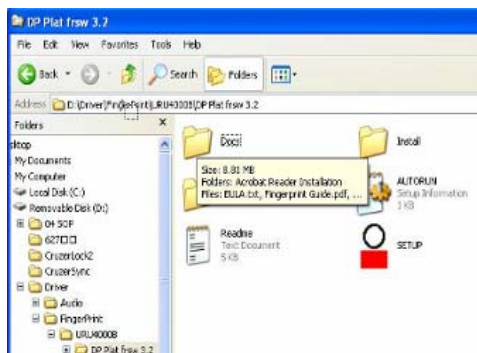


6.Repeat for **USB Serial Port Installation**



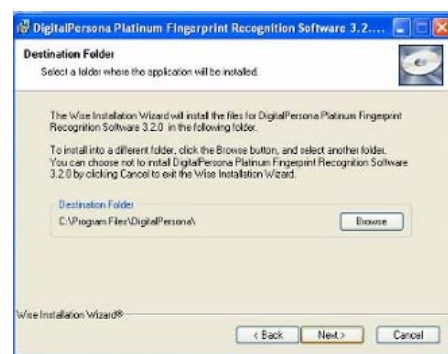
# Fingerprint Reader Driver Installation (optional)

## 1.Plug in 2 in 1 Fingerprint Reader and MSR module.



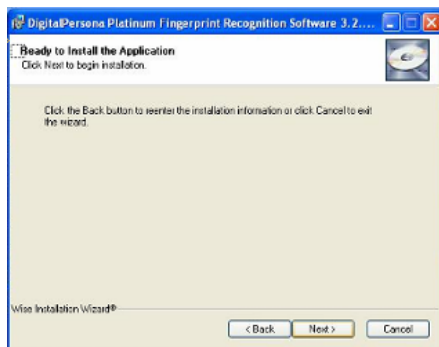
## 2.Locate and Run the Setup.exe file in folder <CD>:\Driver\FingerPrint\Uare\UDP Plat frsw 3.2

## 3.Click Next on the Welcome Screen.



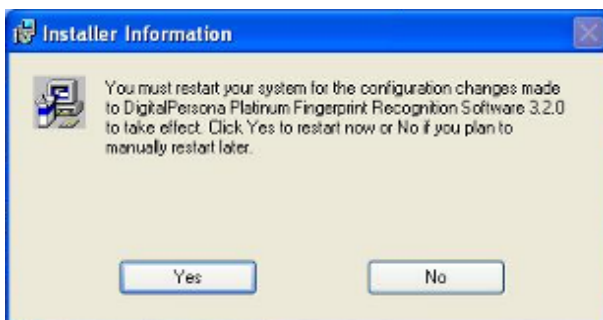
## 4.Click Next on the License Agreement Screen.

## 5.Click Next.



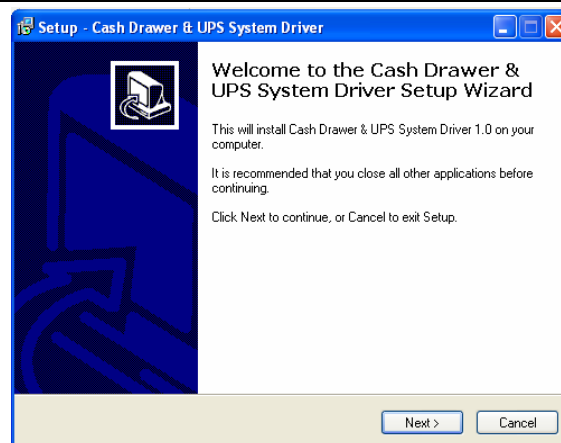
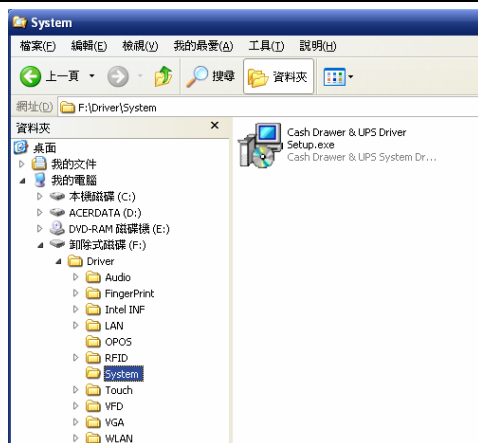
## 6.Click Next to begin Installation.

## 7.Click Finish.



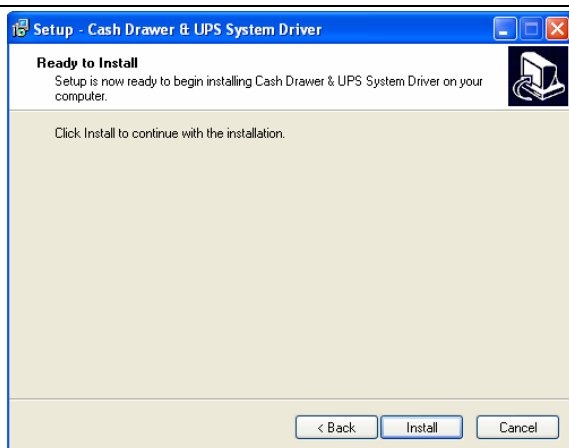
## 8.Click Yes to restart the system (required)

## System Driver Installation (Required for Cash Drawer and UPS)

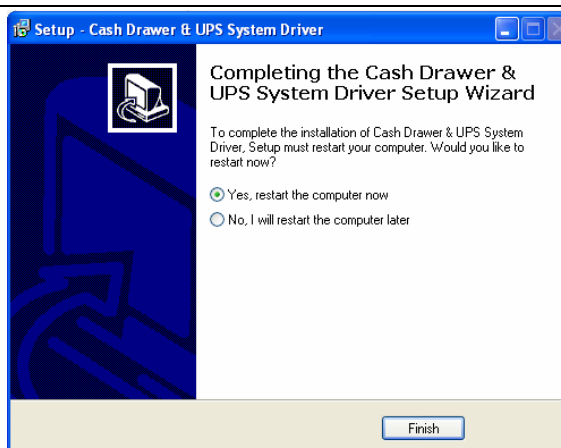


**1. Locate and Run the *Setup.exe* file in folder <CD>:\Driver\System**

**2. Click *Next* on the *Welcome* Screen.**

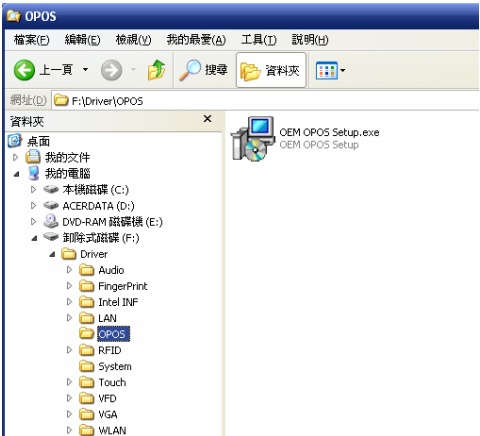

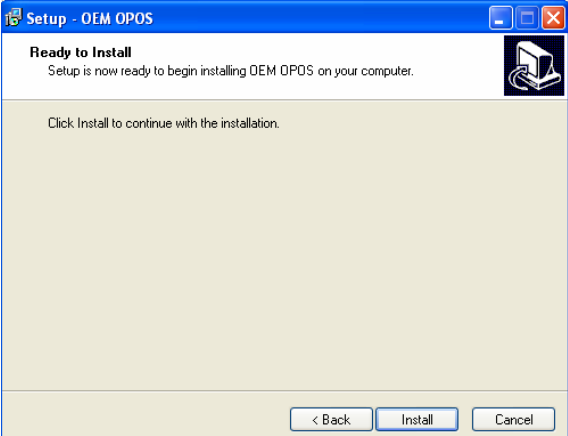
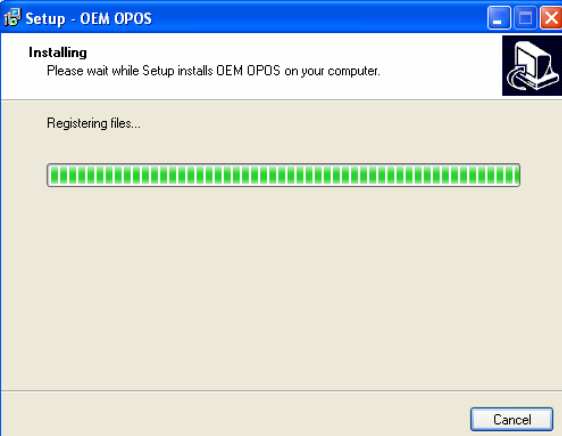



**3. Click *Install* on the Ready to Install screen.**



**4. Click *Finish* on the Installation Complete Screen. Note a system restart is required to complete the Installation.**

# OPOS Driver Installation

	
<p><b>1. Locate and Run the <i>Setup.exe</i> file in folder &lt;CD&gt;:\Driver\OPOS</b></p>	<p><b>2. Click <i>Next</i> on the <i>Welcome</i> Screen.</b></p>
	
<p><b>3. Click <i>Install</i> on the <i>Ready to Install</i> screen.</b></p>	<p><b>4. Wait while the driver is installed.</b></p>
	<p>-----</p>
<p><b>5. Click <i>Finish</i> on the <i>Installation Complete</i> Screen. Note a system restart is required to complete the Installation.</b></p>	<p>-----</p>



## **MSR Driver Installation (optional)**

1. First, plug-in 2 in 1 Fingerprint Reader and MSR module.
2. Reboot system to complete installation.

# Appendix A. Sample C++ Cash Drawer Code for Windows



**NOTE:** Requires installation of System Driver (see page 58).

## 1. Open Cash Drawer

```
// IOCTL Codes
#define GPD_TYPE 56053
#define ADV_OPEN_CTL_CODE CTL_CODE(GPD_TYPE, 0x920, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define ADV_STATUS_CTL_CODE CTL_CODE(GPD_TYPE, 0x900, METHOD_BUFFERED, FILE_ANY_ACCESS)

void OpenDrawer(UCHAR uWhichDrawer) // uWhichDrawer = 1 => CD#1, uWhichDrawer = 2 => CD#2
{
    HANDLE hFile;
    BOOL bRet;
    UCHAR uDrawer = uWhichDrawer;

    // Open the driver
    hFile = CreateFile(TEXT("\\\\.\\ADVSYS"),
        GENERIC_WRITE | GENERIC_READ,
        FILE_SHARE_READ | FILE_SHARE_WRITE, NULL,
        OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);

    if (m_hFile == INVALID_HANDLE_VALUE)
    {
        AfxMessageBox("Unable to open Cash Drawer Device Driver!");
        return;
    }

    // Turn on the Cash Drawer Output (Fire the required solenoid)
    bRet = DeviceIoControl(hFile, ADV_CD_OPEN_CTL_CODE,
        &uDrawer, sizeof(uDrawer),
        NULL, 0,
        &ulBytesReturned, NULL);

    if (bRet == FALSE || ulBytesReturned != 1)
    {
        AfxMessageBox("Failed to write to cash drawer driver");
        CloseHandle(hFile);
        return;
    }

    CloseHandle(hFile);
}
```

## 2. Get Cash Drawer Status

```
void GetDrawerState()
{
    HANDLE hFile;
    BOOL bRet;
    UCHAR uDrawer = uWhichDrawer;

    // Open the driver
    hFile = CreateFile(TEXT("\\\\.\\ADVSYS"),
        GENERIC_WRITE | GENERIC_READ,
        FILE_SHARE_READ | FILE_SHARE_WRITE, NULL,
        OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0);

    if (m_hFile == INVALID_HANDLE_VALUE)
    {
        AfxMessageBox("Unable to open Cash Drawer Device Driver!");
        return;
    }

    // Read the CD status
    bRet = DeviceIoControl(hFile, ADV_CD_STATUS_CTL_CODE,
        NULL, 0,
        &ReadByte, sizeof(ReadByte),
        &ulBytesReturned, NULL);

    if (bRet == FALSE || ulBytesReturned != 1)
    {
        AfxMessageBox("Failed to Read from cash drawer driver");
        CloseHandle(hFile);
        return;
    }
    else
    {
        AfxMessageBox(ReadByte ? "Drawer Open" : "Drawer Closed");
    }

    CloseHandle(hFile);
}
```

## Appendix B. Sample Visual Basic Cash Drawer Code for Windows



**NOTE:** Requires installation of System Driver (see page 58).

```
' Use inside a form's code section and use Option Explicit
Private Declare Function CreateFile Lib "kernel32" Alias "CreateFileA" _
    (ByVal lpFileName As String, ByVal dwDesiredAccess As Integer, _
    ByVal dwShareMode As Integer, ByVal lpSecurityAttributes As IntPtr, _
    ByVal dwCreationDisposition As Integer, ByVal dwFlagsAndAttributes As Integer, _
    ByVal hTemplateFile As IntPtr) As Integer

Private Declare Function DeviceIoControl Lib "kernel32" _
    (ByVal hDevice As IntPtr, ByVal dwIoControlCode As Integer, _
    ByRef lpInBuffer As Byte, ByVal nInBufferSize As Integer, _
    ByRef lpOutBuffer As Byte, ByVal nOutBufferSize As Integer, _
    ByRef lpBytesReturned As Long, ByVal lpOverlapped As Integer) As Integer

Private Declare Function CloseHandle Lib "kernel32" (ByVal hObject As Long) As Integer

' A Form with a single button and one static text box
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click

    Dim DeviceHandle As Integer = 0, iBytesRtn As Integer
    Dim iRet As Integer, iDrawer As Integer, iStatus As Integer

    Const GENERIC_READ As Long = &H00000000, GENERIC_WRITE As Long = &H00000000
    Const FILE_SHARE_READ As Long = &H1, FILE_SHARE_WRITE As Long = &H2
    Const OPEN_EXISTING As Long = &H3, FILE_ATTRIBUTE_NORMAL As Long = &H80
    Const INVALID_HANDLE_VALUE As Long = &HFFFFFFFF
    Const ADV_OPEN_CTL_CODE As Long = &HDAF52400
    Const ADV_STATUS_CTL_CODE As Long = &HDAF52480

    Err.Clear()

    DeviceHandle = CreateFile("\\.\ADVSYS", GENERIC_READ Or GENERIC_WRITE, FILE_SHARE_READ Or
        FILE_SHARE_WRITE, 0, OPEN_EXISTING, FILE_ATTRIBUTE_NORMAL, 0)

    If DeviceHandle = INVALID_HANDLE_VALUE Then
        'Failed to Open Cash Drawer Driver
        Debug.Print("Error opening ADVSYS.sys. Error = " & Err.LastDllError)
    Else
        ' Open Drawer #1
        iDrawer = 1
        iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)

        If (iRet = 0 Or iBytesRtn <> 1) Then
            Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
        End If

        ' Open Drawer #2
        iDrawer = 2
        iRet = DeviceIoControl(DeviceHandle, ADV_OPEN_CTL_CODE, iDrawer, 4, 0, 0, iBytesRtn, 0)

        If (iRet = 0 Or iBytesRtn <> 1) Then
            Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
        End If

        ' Get Drawer Status
        iRet = DeviceIoControl(DeviceHandle, ADV_STATUS_CTL_CODE, 0, 0, iStatus, 4, iBytesRtn, 0)

        If (iRet = 0 Or iBytesRtn <> 1) Then
            Debug.Print("Error writing to Cash Drawer Driver. Error" & Err.LastDllError)
        End If

        If (iStatus = 0) Then
            StatusText.Text = "Cash Drawer(s) Closed"
        Else
            StatusText.Text = "Cash Drawer(s) Open"
        End If

        CloseHandle(DeviceHandle)
    End If
End Sub
```